EXHIBIT 4

Hood River – White Salmon Interstate Bridge Replacement Project

Supplemental Draft Environmental Impact Statement

November 2020

U.S. Department of Transportation Federal Highway Administration

Oregon Department of Transportation

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Hood River-White Salmon Interstate Bridge Replacement Project
Hood River County, Oregon and Klickitat County, Washington
ODOT Key Number: 21280

Supplemental Draft Environmental Impact Statement

Submitted Pursuant to 42 U.S.C. 4332 (2)(c) and where applicable, 49 U.S.C. 303
by U.S. Department of Transportation, Federal Highway Administration,
Oregon Department of Transportation and Port of Hood River

In cooperation with:
U.S. Army Corps of Engineers
U.S. Bureau of Indian Affairs
U.S. Coast Guard
Washington State Department of Transportation

PHILLIP A DITZLER

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Phillip A. Ditzler, FHWA Division Administrator — Date of Approval

Rian Windsheimer, ODOT Region 1 Manager — Date of Approval: 11-13-2020

Michael McElwee, Port of Hood River Executive Director — Date of Approval: 11/5/20

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Abstract: The Port of Hood River (the Port) proposes to replace the Hood River-White Salmon Interstate Bridge (the Project), which connects Hood River County, Oregon and Klickitat County, Washington. A Draft Environmental Impact Statement (EIS) and Section 4(f) Evaluation for the Project (formerly referred to as the SR-35 Columbia River Crossing Project) was published in December 2003. This Supplemental Draft EIS provides updated data and evaluation of environmental impacts and benefits. The Preferred Alternative for the Project is Alternative EC-2. Upon receipt and consideration of public comments on the Supplemental Draft EIS, the Port, Oregon Department of Transportation (ODOT) and the Federal Highway Administration (FHWA) (joint lead agencies for the EIS) intend to publish a combined Final EIS and Record of Decision (ROD).

The Preferred Alternative EC-2 would replace the existing bridge with a new fixed-span bridge and remove the existing bridge after the replacement bridge is opened. The existing bridge is tolled, and the replacement bridge would also be a tolled facility. The replacement bridge under the Preferred Alternative EC-2 would be located slightly west of the existing bridge and would include two 12-foot travel lanes, two 8-foot shoulders, and one 16-foot shared use path. The replacement bridge would install 12 in-water piers, 1 pier on land, and 2 abutments. The signalized intersection of SR 14 and the bridge approach road would be reconstructed as a roundabout. Construction of the replacement bridge would require acquisition of 3.0 acres from 15 properties. The Project would require relocation of utilities and may displace two Port buildings but would not displace any residents or businesses. The Project would permanently impact 0.1 acre of wetlands, 0.16 acre of wetland buffer, and 2.32 acres of vegetation. Total Project construction cost is estimated to be $300 million in 2019 dollars. Project construction would take approximately 6 years with 3 years to construct the replacement bridge and another 3 years to remove the existing bridge.

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TO THOSE WHO HAVE EXPRESSED INTEREST IN THE:

Hood River-White Salmon Interstate Bridge Replacement Project
Supplemental Draft Environmental Impact Statement
Hood River County, Oregon and Klickitat County, Washington
ODOT Key Number: 21280

Thank you for your interest in the proposed Hood River-White Salmon Interstate Bridge Replacement Project.

The Federal Highway Administration (FHWA), Oregon Department of Transportation (ODOT) and Port of Hood River have completed the **Supplemental Draft Environmental Impact Statement (EIS)** for the Project. A 45-day public comment period is provided with a community meeting/public hearing scheduled during this period.

If you have questions or need additional information concerning the proposed Project, please contact Kevin Greenwood, Project Director, Port of Hood River, at: (541) 386-1645.

Thank you for your participation,

Michael McElwee
Port of Hood River Executive Director

Notice of Document Availability

This Supplemental Draft EIS is available for review at the following locations:

Port of Hood River (by appointment)
1000 E. Port Marina Drive
Hood River, OR 97031
Note: Washington residents can contact the Port to schedule an appointment to view the document in Klickitat County

White Salmon Valley Community Library (limited services during the COVID-19 pandemic)
77 NE Wauna Avenue
White Salmon, WA 98672

Stevenson Community Library (limited services during the COVID-19 pandemic)
120 NW Vancouver Avenue
Stevenson, WA 98648

These documents are also available on the Project website: https://portofhoodriver.com/bridge/bridge-replacement-project/.

At the time of publication, Port of Hood River offices are closed due to COVID-19. If you would like to review a hard copy of the Supplemental Draft EIS, please contact the Port at newbridge@portofhoodriver.com or 541-386-1645 to make arrangements for review of the hard copy. The Supplemental Draft EIS can also be viewed at the White Salmon Valley Community Library and the Stevenson Community Library which are open with limited services during the COVID-19 pandemic.

How to Submit Comments

Written comments on the Supplemental Draft EIS can be submitted during the public comment period (November 20, 2020, through January 4, 2021) by email to newbridge@portofhoodriver.com or regular mail to:

Hood River Bridge Supplemental Draft EIS
Kevin Greenwood
Port of Hood River
1000 E. Port Marina Drive
Hood River, OR 97031

Comments can be submitted orally and in writing at the public hearing for the Supplemental Draft EIS on December 3, 2020. Comments may also be submitted by leaving a voice message on the Port's Supplemental Draft EIS comment line at 833-215-2352 (toll-free).

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Acronyms and Abbreviations

Acronym	Definition
AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
APE	area of potential effects
API	area of potential impacts
AVE	Area of Visual Effect
BA	biological assessment
BIA	Bureau of Indian Affairs
BMPs	best management practices
Btus	British thermal units
CAT	Columbia Area Transit
CETAS	Collaborative Environmental and Transportation Agreement to Streamline
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_{2e}	carbon dioxide equivalent
COVID-19	coronavirus disease 2019
CRGC	Columbia River Gorge Commission
CRGNSA	Columbia River Gorge National Scenic Area
CRITFC	Columbia River Inter-Tribal Fishing Commission
CTSI	Confederated Tribes of the Siletz Indians
CTUIR	Confederated Tribes of the Umatilla Indian Reservation
DAHP	Department of Archaeology and Historic Preservation
dBA	A-weighted decibels
DEQ	Department of Environmental Quality
DOI	Department of Interior
DOT	Department of Transportation
DSL	Department of State Lands
Ecology	Washington State Department of Ecology
EIS	environmental impact statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESCP	Erosion and Sediment Control Plan
ETC	electronic toll collection
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gas
Grande Ronde	Confederated Tribes of the Grand Ronde Community of Oregon
HB	House Bill
Hood River Bridge	Hood River-White Salmon Interstate Bridge

Acronym	Definition
I-	interstate
IWWW	in-water work window
lbs.	pounds
LOS	levels of service
LWCF	Land and Water Conservation Fund
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MATS	Mt. Adams Transportation Service
MBTA	Migratory Bird Treaty Act
mmBtu	million British thermal units
mph	miles per hour
MSAT	mobile source air toxics
NAAC	Noise Abatement Approach Criteria
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NO_X	nitrogen oxides
NOAA Fisheries	National Oceanic and Atmospheric Administration National Marine Fisheries Service
NOI	Notice of Intent
NPS	National Park Service
NRHP	National Register of Historic Places
O_3	ozone
OAR	Oregon Administrative Rules
ODFW	Oregon Department of Fish and Wildlife
ODOT	Oregon Department of Transportation
OHWM	ordinary high water mark
OPRD	Oregon Parks and Recreation Department
OR&N	Oregon Railway and Navigation
ORS	Oregon Revised Statutes
PCBs	polychlorinated biphenyls
PM_{10}	particulate matter less than 10 micrometers in size
$PM_{2.5}$	particulate matter less than 2.5 micrometers in size
RCW	Revised Code of Washington
RD	Riverfront District
ROD	Record of Decision
RTC	Regional Transportation Council
SAC	Signatory Advisory Committee
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SEPA	State Environmental Policy Act
SHPO	State Historic Preservation Office

Acronym	Definition
SO_2	sulfur dioxide
SP&S	Spokane, Portland, and Seattle Railway
SR	State Route
TCPs	traditional cultural properties
TEA-21	Transportation Equity Act for the 21st Century
TFAS	treaty fishing access site
the Port	Port of Hood River
the Project	Hood River-White Salmon Interstate Bridge Replacement Project
TS&L	type, size, and location
TSP	Transportation System Plan
TSS	total suspended solids
U.S.	United States
U.S.C.	United States Code
Uniform Act	Uniform Relocation Assistance and Real Property Acquisition Policies Act
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled
Warm Springs	Confederated Tribes of the Warm Springs Reservation of Oregon
WDFW	Washington Department of Fish and Wildlife
WSDOT	Washington State Department of Transportation
WSMC	White Salmon Municipal Code
Yakama Nation	Confederated Tribes and Bands of the Yakama Nation

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EXECUTIVE SUMMARY

PROJECT DESCRIPTION AND LOCATION

The Port of Hood River (the Port) proposes to replace the Hood River-White Salmon Interstate Bridge (the Project). The Project spans the Columbia River between Hood River, Oregon, and Bingen and White Salmon, Washington, which is approximately 60 miles east of Portland, Oregon.

The existing Hood River-White Salmon Interstate Bridge (locally known as the Hood River Bridge) was built in 1924 and a lift span was added to the bridge in 1938 to respond to higher water elevations in the pool behind Bonneville Dam. The bridge approaches tie into the federal, state, and local transportation facilities within the city limits of White Salmon and within the urban growth boundary of the City of Hood River. The existing bridge is owned and maintained by the Port, which collects tolls from most vehicles; public transit vehicles are exempt. The existing bridge is nearing the end of its serviceable life and is obsolete for modern vehicles with height, width, and weight restrictions and is also a navigational hazard for marine vessels. The bridge has no sidewalks or bicycle lanes for non-motorized travel and would likely not withstand a large earthquake.

A new, replacement bridge would provide a safe and reliable way for everyone to cross or navigate the Columbia River—by car, truck, bus, bicycle, on foot, or on the water. The Project would construct a replacement bridge that would support a thriving economy and livable communities and the existing bridge would be removed. Total Project construction cost is estimated to be $300 million in 2019 dollars. Project construction would take approximately 6 years, with 3 years to construct the replacement bridge and another 3 years to remove the existing bridge.

PROJECT HISTORY AND REASON FOR PREPARING A SUPPLEMENTAL DRAFT EIS

The Project began in 1999, with the plan for a feasibility study to determine if there was a need to replace the bridge and whether there was community support for a bridge improvement, as shown in Exhibit ES-1. The feasibility study led to a reasonable range of alternatives to be evaluated in a Draft Environmental Impact Statement (EIS). The State Route (SR) 35 Columbia River Crossing Draft EIS was published in 2003, which identified the "EC-2 West Alignment" as the Preliminary Preferred Alternative. The environmental review phase of the Project was put on hold after the comment period ended in 2004 due to lack of funding for additional work.

Exhibit ES-1. Project History Timeline

In 2017, the Port received Oregon State House Bill 2017 (HB 2017) ("Keep Oregon Moving") funding to continue the Project. The Port is partnering with the Federal Highway Administration (FHWA), Oregon Department of Transportation (ODOT), and Washington State Department of Transportation (WSDOT) to continue the environmental review phase.

Based on a re-evaluation of the Draft EIS, FHWA concluded that some of the analysis in the Draft EIS was no longer valid because of the changes in some conditions and regulations over the passage of time. FHWA determined that preparing a Supplemental Draft EIS and then a combined Final EIS/Record of Decision (ROD) is necessary for completing the National Environmental Policy Act (NEPA) documentation and environmental review phase of the Project. The project history is detailed in Section 1.1, Introduction to the Project.

Purpose and Need

Under NEPA, the purpose and need statement establishes why the Project is being proposed and is used to evaluate the alternatives and, ultimately, to select the preferred alternative. An abbreviated version of the purpose and need statement is provided below, with the complete statement provided in Section 1.2, Purpose and Need.

Purpose Statement

The purpose of this Project is to improve multi-modal transportation of people and goods across the Columbia River between the communities of White Salmon and Bingen, Washington and Hood River, Oregon. The Project is intended to: a) improve traffic operations for current and future cross-river traffic and at connections to I-84 and SR 14; b) provide a cross-river connection for bicyclists and pedestrians; c) improve vehicle and freight travel safety by reducing real and perceived hazards; d) maintain and improve a transportation linkage between the White Salmon, Bingen, and Hood River communities, businesses, and services; e) fulfill the legislative directives tied to the Project funding; f) improve river navigation for vessels passing under the bridge; and g) improve the river crossing's seismic resiliency.

Need for Project

The overall need for the Project is to rectify current and future transportation inadequacies and deficiencies associated with the existing bridge. Specific needs are addressed as follows.

- **Present Capacity**: substandard width and operational issues are causing traffic congestion on the bridge and at both approaches
- **Future Transportation Demand**: the existing bridge is not designed to meet future travel demand for vehicles
- **Bicycle and Pedestrian Facilities**: lack of bicycle and pedestrian facilities limits multi-modal mobility
- **Safety**: narrow lanes and lack of shoulder create real and perceived safety hazards
- **Social Demands/Economic Development**: the existing bridge restricts the current and projected flow of goods, labor and consumers across the river
- **Legislation**: comply with federal funding obligation Transportation Equity Act for the 21st Century (TEA-21), the Washington State Legislature designation of the SR-35 corridor, and Oregon HB 2017
- **River Navigation**: the substandard horizontal clearance creates difficulties for safe vessel navigation
- **Seismic Deficiencies:** the existing bridge does not meet current seismic standards and is vulnerable to a seismic event

Lead and Cooperating Agencies

FHWA is acting as the lead agency for the NEPA process with the Port and ODOT serving as joint lead agencies. FHWA is leading the EIS as the bridge connects to the Oregon and Washington state highway systems and is included in the National Highway System. The Port is acting as a joint lead as they own the bridge and have received state funding through the Oregon State Legislature for this environmental review phase of the Project. The Port shares in the responsibilities to prepare the Supplemental Draft EIS and Final EIS. ODOT is also acting as a joint lead as they are providing oversight, environmental reviews, and liaison staff for the EIS review process. The responsibilities of the lead agencies are highlighted in Exhibit ES-2.

Exhibit ES-2. Lead Agencies and Responsibilities

Lead Agency	Responsibilities
FHWA	• Manage the NEPA coordination process • Prepare the Supplemental Draft EIS and the Final EIS • Prepare technical work products • Provide opportunity for public and cooperating/participating agency involvement
The Port	
ODOT	

Cooperating agencies for the Project and their responsibilities are listed in Exhibit ES-3. Cooperating agencies are any federal or state agency that has jurisdiction by law or special expertise with respect to any environmental impact involved in the Project. Cooperating agencies consult with the lead agencies on required technical studies, conduct joint field reviews, and express their agency views on subjects within their jurisdiction or expertise.

Exhibit ES-3. Cooperating Agencies and Responsibilities

Cooperating Agency	Responsibilities
United States (U.S.) Army Corps of Engineers (USACE)	• Clean Water Act, Section 404 Permit • Rivers and Harbors Act, Section 408 Navigation Permit • Navigation channel maintenance • Bonneville Dam and pool operations
U.S. Bureau of Indian Affairs (BIA)	• Federal-Tribal Trust
U.S. Coast Guard (USCG)	• Rivers and Harbors Act, Section 9 Bridge Permit • Marine Safety, river navigation aids and buoys
WSDOT	• Technical reviews of select environmental resources • Design review of Project elements in Washington State • Coordination with ODOT, FHWA, and Washington State Department of Archaeology and Historic Preservation (DAHP) • Washington State Environmental Policy Act (SEPA) analysis on WSDOT actions associated with bridge

Participating agencies are any federal, tribal, state, regional, and local agencies that have an interest in the Project. Participating agencies for the Project include the cities of Hood River and White Salmon, Hood River and Klickitat counties, Southwest Washington Regional Transportation Council (RTC), and various state and federal agencies.

Agency coordination is detailed in Chapter 5, Public Involvement and Agency Coordination.

Tribal Consultation

FHWA is conducting government-to-government tribal consultation in coordination with ODOT, the programmatically delegated lead authority for Section 106 compliance and consultation. ODOT will continue consultation with the previously consulted four tribes (Confederated Tribes and Bands of the Yakama Nation [Yakama Nation], the Confederated Tribes of the Warm Springs Reservation of Oregon [Warm Springs], the Confederated Tribes of the Umatilla Indian Reservation [CTUIR], and the Nez Perce Tribe) as well the Cowlitz Indian Tribe, Confederated Tribes of the Siletz Indians (CTSI), and Confederated Tribes of the Grand Ronde Community of Oregon (Grand Ronde). In addition, consultation on treaty fishing rights on the Columbia River has been undertaken by ODOT and FHWA with the Yakama Nation, the Warm Springs, the CTUIR, and the Nez Perce Tribe.

Tribal consultation is detailed in Chapter 5, Public Involvement and Agency Coordination.

Public Involvement

During planning and development of the Supplemental Draft EIS, various public involvement activities and events have been held. The Port hosted a community meeting in December 2018 to "re-launch" the Project to the public. The community meeting sought public input to confirm past work contained in the Draft EIS (such as the purpose and need statement, the range of alternatives analyzed, and the Preliminary Preferred Alternative previously identified) as well as to obtain new/missing information relevant to the technical analysis.

Following the community meeting, public engagement activities included an online survey, stakeholder interviews, organization of an EIS working group, environmental justice focus group meetings, tabling events, a navigation survey, and briefings with municipalities, organizations, and the Port Commission. Project updates and notice of public outreach events have been posted to the Project webpage and the Port's social media accounts (Twitter and Facebook), and also provided as news releases.

Public involvement is detailed in Chapter 5, Public Involvement and Agency Coordination.

Alternatives Considered

Three alternatives are being evaluated to address the Project's purpose and need:

- No Action Alternative
- Preferred Alternative EC-2
- Alternative EC-3

Exhibit ES-4 shows the alignment of the existing bridge, which represents the No Action Alternative, and the two build alternatives. The build alternatives connect to SR 14 in White Salmon, Washington, and Button Bridge Road in Hood River, Oregon, just north of the Interstate 84 (I-84)/US Highway 30 (US 30) interchange (Exit 64).

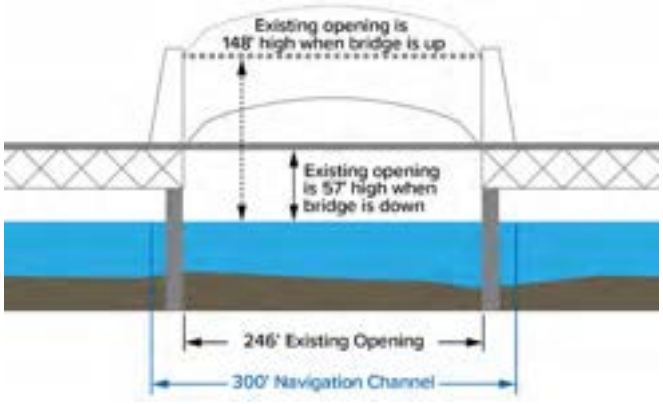
Each alternative is summarized in Exhibit ES-5 and described in more detail in Chapter 2. Exhibit ES-6 illustrates the navigational clearance for the existing bridge and the replacement bridge (same for each build alternative).

Exhibit ES-4. Location of the Preferred Alternative EC-2 and Alternative EC-3

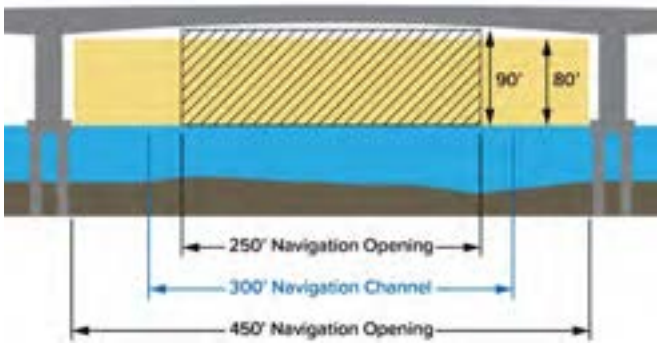
Exhibit ES-5. Summary Comparison of Key Elements of Alternatives

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Bridge alignment	No change	Slightly west of existing	Slightly east of existing
Bridge structure			
Bridge type	Steel deck truss bridge with vertical lift span	Segmental concrete box girder bridge (fixed span)	
Total number of piers (in water/on land)	28 (20/8)	13 (12/1)	
Structure length	4,418 feet	4,412 feet	4,553 feet
Travel lanes	9-foot 4.75-inch lanes	12-foot lanes	
Roadway shoulders	No shoulders	8-foot shoulders	
Vehicle height limit	14 feet-7 inches	None	
Shared Use Path	None	12-foot wide, only on west side with overlooks	
Bridge deck	Steel-grated	Concrete	
Vehicle Gross Weight Limit	80,000 pounds (lbs.); no trip permit allowance for overweight vehicles	> 80,000 lbs., with approved trip permit	
Design speed	Unknown	50 miles per hour (mph)	
Posted speed	25 mph	35 mph	
Toll collection	Toll booth on Oregon side	Electronic tolling/No toll booth	
Stormwater treatment	None	Detention and water quality treatment	
Navigation clearance	246 feet horizontal by 57 feet vertical when bridge is down and up to 148 feet vertical when lifted	450 feet horizontal x 80 feet vertical (maximum horizontal opening) 250 feet horizontal x 90 feet vertical (centered within maximum vertical opening)	
SR 14/Hood River Bridge intersection	Signalized intersection	Roundabout slightly west of existing intersection; SR 14 raised approximately 2 feet above existing road level	Roundabout slightly east of existing intersection; SR 14 remains at existing road level
Button Bridge Road/E. Marina Way intersection	Signalized intersection	Signalized intersection	
Anticipated construction duration	None	6 years (3 years to construct the replacement bridge and 3 years to remove the existing bridge)	

Exhibit ES-6. Navigation Clearance of Existing Bridge and Proposed Replacement Bridge



Existing Bridge



Proposed Replacement Bridge

No Action Alternative

The No Action Alternative would retain the existing bridge in its existing condition and configuration. Routine operations would continue, and maintenance would be implemented to continue operations. The Supplemental Draft EIS considers two scenarios for the No Action Alternative:

- **End of bridge lifespan**: assumes that the existing Hood River Bridge would remain in operation through 2045[1] and would be closed sometime after 2045 when maintenance costs would become unaffordable. At such a time, the bridge would be closed to vehicles and cross-river travel would have to use a detour route approximately 21 miles east on SR 14 or 23 miles east on I-84 to cross the Columbia River using The Dalles Bridge (US 197). Alternatively, vehicles could travel 25 miles west on SR 14 or 21 miles west on I-84 to cross the Columbia River via the Bridge of the Gods. When the bridge would be closed, the lift span would be kept in a raised position to support large vessel passage that previously required a bridge lift or the existing bridge would be removed.
- **Catastrophic event**: addresses the possibility that an extreme event that damages or otherwise renders the bridge inoperable would occur prior to 2045. Such events could include an earthquake, landslide, vessel strike, or other unbearable loads that the bridge structure cannot support.

Preferred Alternative EC-2

Alternative EC-2 would construct a replacement bridge west of the existing bridge. The existing bridge would be removed following construction of the replacement bridge. Under Alternative EC-2, the main span of the bridge would be approximately 200 feet west of the existing lift span. The bridge terminus in White Salmon, Washington, would be located approximately 123 feet west of the existing SR 14/Hood River Bridge intersection, while the southern terminus would be in roughly the same location at the Button Bridge Road/E. Marina Way intersection in Hood River, Oregon, as shown in Exhibit ES-7 and Exhibit ES-8.

The bridge would be a 4,412-foot fixed-span segmental concrete box girder bridge with a concrete deck and no lift span. The bridge would have 12 pier-sets in the Columbia River and one land-based pier on the Washington side of the river. The bridge would be designed to be seismically sound under a 1,000-year event and operational under a Cascadia Subduction Zone earthquake.

While the Port may own and operate the replacement bridge, other options for the ownership and operation of the replacement bridge that may be considered include other governmental entities, a new bi-state bridge authority, and a public-private partnership, depending on the funding sources used to construct the replacement bridge. The bridge would include one 12-foot travel lane in each direction, an 8-foot shoulder on each side, as shown in Exhibit ES-9. Vehicles would no longer be limited by height, width, or weight.

[1] The year 2045 is the design horizon for the Project. The design horizon is the year for which the Project was designed to meet anticipated needs.

The bridge would include a 12-foot wide shared use path separated from traffic with a barrier on the west side, as shown in Exhibit ES-9. In the middle of the bridge the shared use path would widen an additional 10 feet in two locations to provide two 40-foot long overlooks with benches, providing views of the Columbia River Gorge. The overlook locations are shown in Exhibit ES-7 and Exhibit ES-8. The cross-section of the overlooks is shown in Exhibit ES-9. No tolls would be collected from non-motorized users (e.g., pedestrians, bicyclists) who travel on the shared use path.

The bridge would connect to SR 14 on the Washington side at a new two-lane roundabout slightly west of the existing SR 14/Hood River Bridge intersection, as shown in Exhibit ES-8. On the Oregon side, the southern end of the bridge would transition to Button Bridge Road, connecting to the local road network at the existing signalized Button Bridge Road/E. Marina Way intersection north of I-84.

The new shared use path would connect to existing sidewalks along the south side of SR 14 in Washington and to roadway shoulders (for bicyclists) on both sides of SR 14 at the new roundabout with marked crosswalks, as shown in Exhibit ES-8. On the Oregon side, the shared use path would connect to existing sidewalks, bicycle lanes, and local roadways at the signalized Button Bridge Road/E. Marina Way intersection. Total Project construction cost for both build alternatives is estimated to be $300 million in 2019 dollars.

Exhibit ES-7. Preferred Alternative EC-2 Alignment

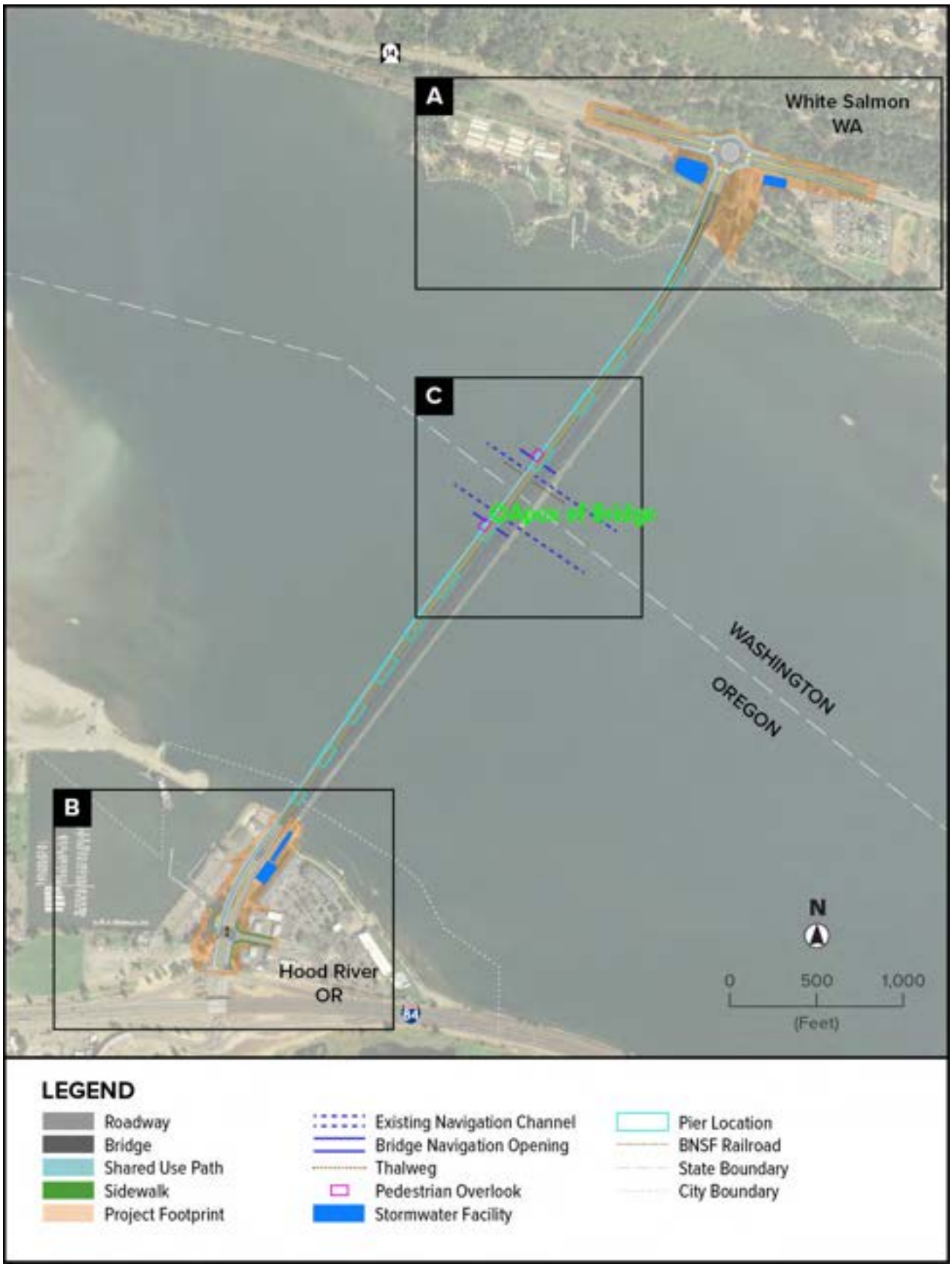


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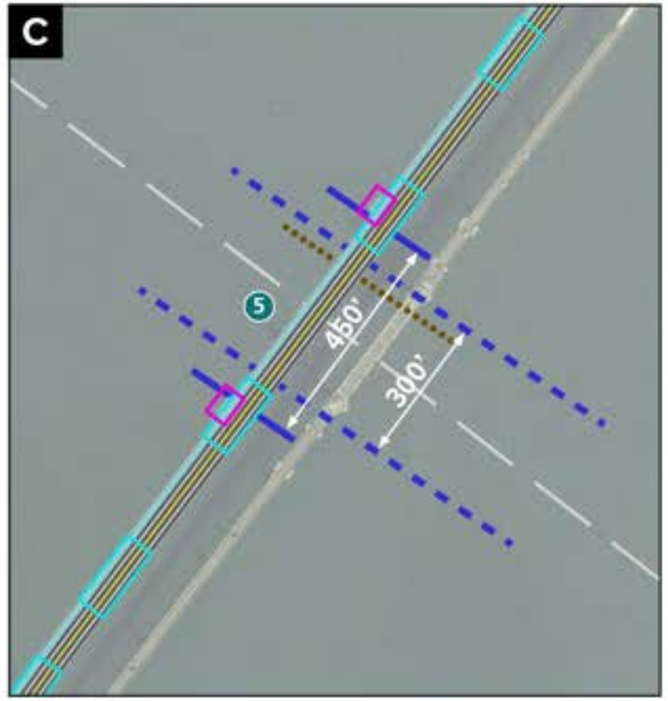
Exhibit ES-8. Preferred Alternative EC-2 Enlargements



1. New two-lane roundabout with marked crosswalks
2. New shared use path across bridge
3. New stormwater detention and water quality treatment facilities
4. Elimination of toll booth
5. New wider bridge opening crosses navigation channel at a perpendicular angle

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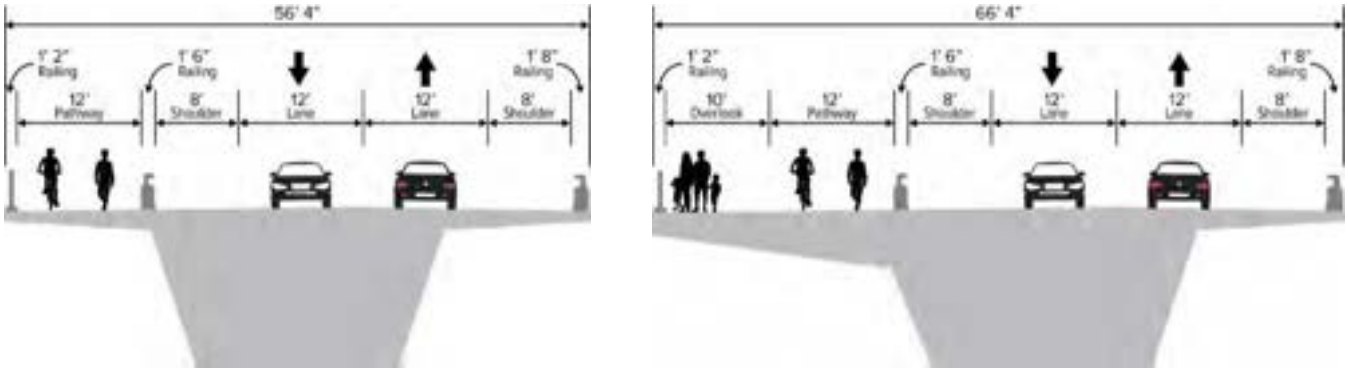
Exhibit ES-9. Replacement Bridge Cross-Sections



Typical

With Pedestrian Overlook

ALTERNATIVE EC-3

Alternative EC-3 would construct a replacement bridge east of the existing bridge. Like Alternative EC-2, the existing bridge would be removed following construction of the replacement bridge. Exhibit ES-10 shows alignment of Alternative EC-3 and Exhibit ES-11 provides enlargements of the improvements that would be constructed under Alternative EC-3. Under Alternative EC-3, most elements of the replacement bridge would be the same as the elements for Alternative EC-2 except for some differences in alignment and roadway connections.

Under Alternative EC-3, the alignment of the main span of the bridge would be approximately 400 feet east of the existing lift span. The bridge terminus in White Salmon, Washington, would be located approximately 140 feet east of the existing SR 14/Hood River Bridge intersection, while the southern terminus would be roughly the same as the existing terminus at the Button Bridge Road/E. Marina Way intersection in Hood River, Oregon. The bridge would be a 4,553-foot fixed-span segmental concrete box girder bridge with a concrete deck and no lift span. Like Preferred Alternative EC-2, the bridge would have 12 piers in the Columbia River and one land-based pier on the Washington side of the river.

Connections to roadways would generally be the same as Alternative EC-2, but the bridge would connect to SR 14 on the Washington side at a new two-lane roundabout slightly east of the existing SR 14/Hood River Bridge intersection. On the Oregon side, improvements extend slightly further south to the Button Bridge Road/I-84 on and off ramps. The private driveway on Button Bridge Road north of E. Marina Way would be closed under this alternative. Connections to bicycle and pedestrian facilities would generally be the same as Alternative EC-2. Like Preferred Alternative EC-2, the total Project construction cost is estimated to be $300 million in 2019 dollars.

Exhibit ES-10. Alternative EC-3 Alignment

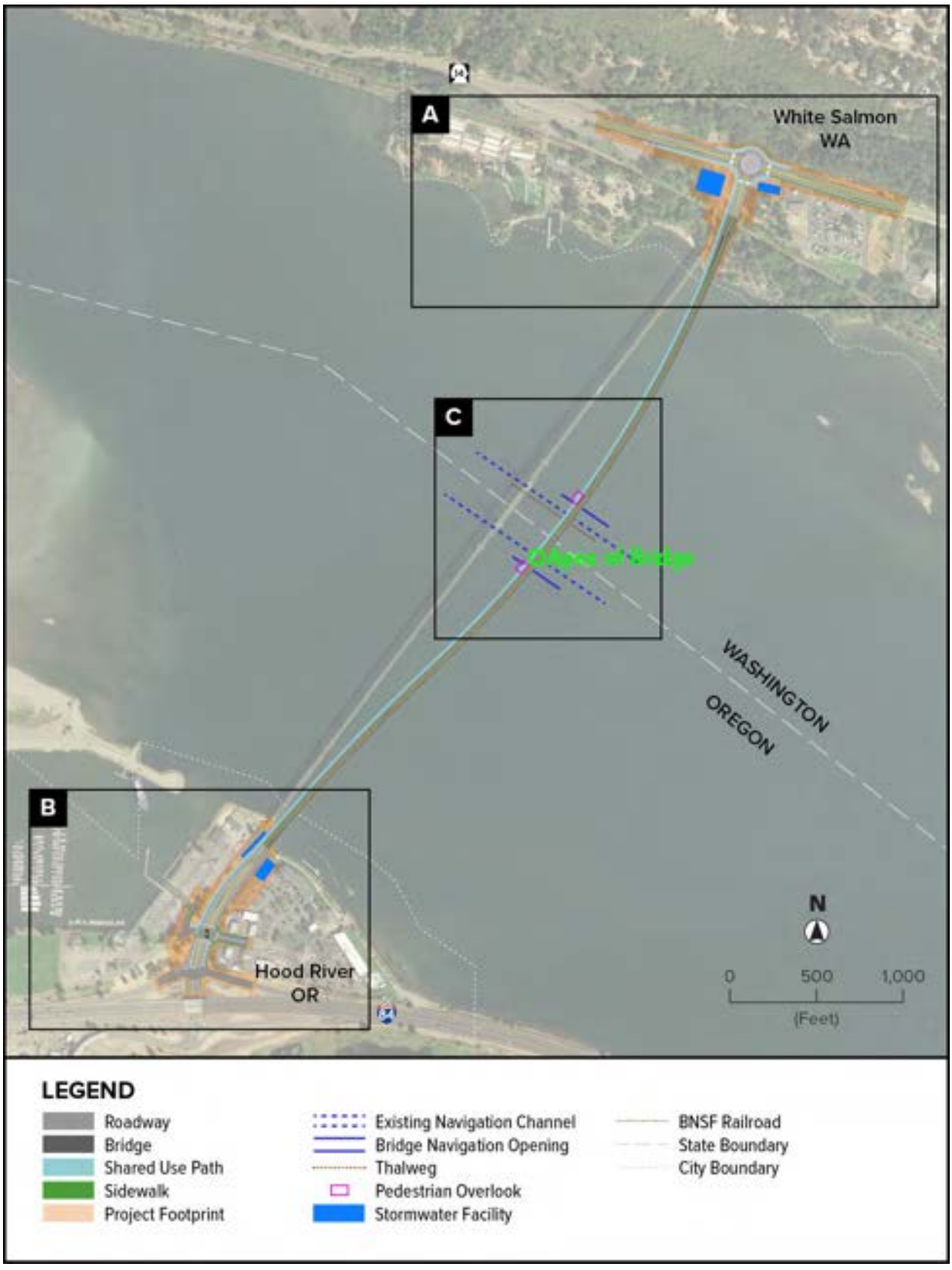
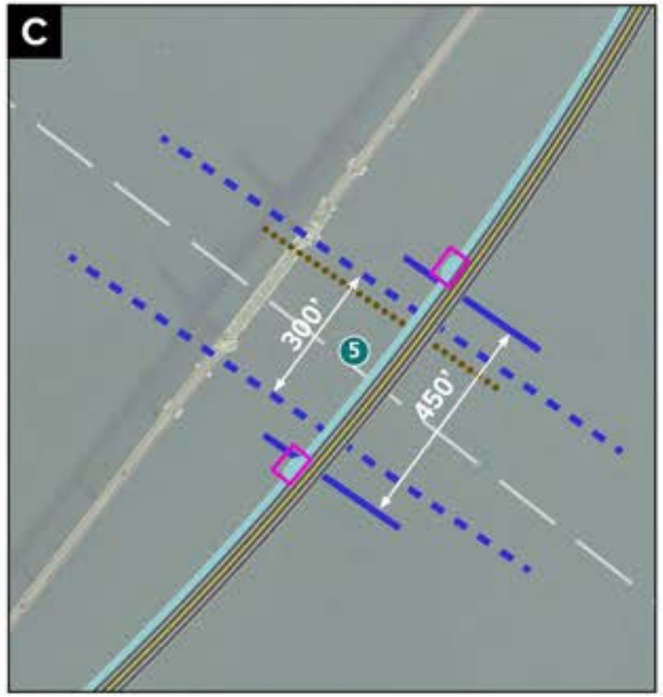


Exhibit ES-11. Alternative EC-3 Enlargements



1. New two-lane roundabout with marked crosswalks
2. New shared use path across bridge
3. New stormwater detention and water quality treatment facilities
4. Elimination of toll booth
5. New wider bridge opening crosses navigation channel at a perpendicular angle

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Other Alternatives Considered

Through the development of crossing corridors and facility types during the Feasibility Study and a re-screening of alternatives during the Supplemental Draft EIS phase, the following alternatives were considered but dismissed:

- West Corridor
- City Center Corridor
- Existing-High Corridor
- East A Corridor
- East B Corridor
- Tunnel Facility
- Retrofitting the Existing Bridge
- Alternative EC-1

The rationale for dismissing these alternative corridors and facility types is provided in Section 2.3, Alternatives Development and Screening and Section 2.4, Alternatives Considered but Dismissed.

Construction of the Build Alternatives

Construction of the build alternatives would be similar in duration and approach. The NEPA process is anticipated to be complete in 2021; subsequent phases of the Project would be dependent on funding availability. Construction would take approximately 6 years and would require work during approximately six in-water work windows (IWWWs). Approximately three IWWWs would be necessary to construct the replacement bridge, and approximately three additional IWWWs would be necessary to complete the removal of the existing bridge. Certain construction and removal activities conducted below the ordinary high water mark (OHWM) of the Columbia River would be restricted to an IWWW established for the Project.

The existing bridge would remain open until the replacement bridge is constructed and operational, at which point it would be dismantled and removed.

The method of delivery for Project final design and construction has not been determined at this time. Traditional delivery methods, such as design-bid-build, and alternative delivery methods, such as design-build and public-private-partnerships to name a few, will continue to be considered by the Port. As part of Oregon's HB 2017, the Port was provided legal authority by the state to enter into a public-private-partnership.

Construction of the build alternatives is detailed in Section 2.2, Construction of the Build Alternatives.

Beneficial and Adverse Impacts

The build alternatives would provide a variety of beneficial impacts, which include the following:

- **Traffic Operations:** Long-term direct benefits by providing wider lanes and a shoulder in each direction for motor vehicles. Existing heavy vehicle restrictions would be eliminated, and vehicle speeds would increase with the higher speed limit. Travel time reliability would improve as disabled vehicles would not block the roadway due to the availability of roadway shoulders on the replacement bridge. The build alternatives assume the SR 14/Hood River Bridge intersection would be reconstructed as a roundabout, which would substantially reduce congestion during am and pm peak hours compared to the No Action Alternative.
- **Pedestrian and Bicycle Access:** The replacement bridge would provide a barrier-separated shared use path along the west side of the bridge for pedestrians and bicyclists. This would offer a new facility for people who want to walk or bike between Oregon and Washington; no toll would be charged to pedestrians and bicyclists traveling on the shared use path. A beneficial indirect impact would be increased pedestrian and bicycle use of the replacement bridge over time, which would allow more recreationalists and those who commute by these modes to have views from the bridge toward the Columbia River Gorge.

- **Water Quality:** While temporary impacts to water quality would occur during project construction (e.g., installation of piles), the build alternatives would substantially reduce pollutant discharge compared to the existing steel grated bridge that has no water quality treatment. Stormwater runoff from the replacement bridge would be treated, resulting in improved water quality.
- **Fish Species and Habitat**: The replacement bridge under both build alternatives would include the permanent installation of bridge piles and footing that would result in the permanent loss of benthic habitat within the Columbia River. However, the removal of the existing bridge and associated riprap armoring would result in less overall impact to benthic habitat since the replacement bridge, under both build alternatives, would have fewer in-water piers than the impact from the existing bridge. Water quality improvements (above) would also have the potential to indirectly benefit habitat conditions for fish and wildlife.
- **Local and Regional Economies:** Construction of the build alternatives would bring money into the local and regional economy through short-term increases in employment and associated consumer spending, which can have a multiplier effect, creating additional jobs. The replacement bridge would provide a long-term benefit of an improved regional connection between the economies of Hood River and western Klickitat County and could benefit regional freight movement with no width and load restrictions. The replacement bridge would also benefit the local economy with a reliable travel connection between the cities of White Salmon, Bingen, and Hood River so that residents and employees can continue to access to jobs, services, and shopping across the river.
- **River Navigation**: Both build alternatives would widen the bridge horizontal navigation clearance that exceeds the navigation channel width and provide additional space for ships and barges to safely tack in windy conditions. The 90-foot vertical clearance would provide safe passage for current and known future vessels, although some vessels would need to lower masts prior passing under the bridge.
- **Seismic**: The existing bridge does not meet current seismic design standards and the Oregon side is underlain by liquefiable soils. If a catastrophic geologic event occurs, direct impacts could include damage or failure of the existing bridge and premature closure. The replacement bridge would meet current design standards to be seismically sound under a 1,000-year seismic event and operational under a Cascadia Subduction Zone earthquake.

The build alternatives were developed to avoid and minimize impacts to the natural and human environment. The EIS process has included efforts by FHWA, the Port, ODOT, and their partners to evaluate impacts and develop appropriate mitigation measures. The anticipated adverse impacts and proposed mitigation include the following:

- **Tolls:** As the existing bridge is tolled, the Port and local agencies assume that the vehicle travel lanes on the replacement bridge would also be tolled. Future toll rates for the replacement bridge have not been determined at this time. The toll rate structure for the build alternatives would likely be influenced by the level of repayment needed for funding construction of the bridge; thus, tolls could be higher under the build alternatives compared to tolls under the No Action Alternative that supports maintenance and a replacement bridge fund. Prior to establishing toll rates and account fees for users of the replacement bridge, a robust and inclusive public engagement program and technical evaluation would be undertaken to assess strategies to mitigate any undue financial burden caused by increased toll rates or undue barriers to use the bridge caused by the implementation of an all-electronic toll collection (ETC) system.
- **Acquisitions and Displacement:** Acquisitions under Alternative EC-2 would include 3 full parcel and 11 partial parcel acquisitions, 3 permanent easements, relocation of a gas utility transfer station and generator, removal of parking and storage space on Port property, and removal of some parking spaces at the Heritage Plaza Park and Ride facility. Acquisitions under Alternative EC-3 would include 2 full parcel acquisitions, 9 partial parcel acquisitions, 3 permanent easements, removal of some parking spaces at the Heritage Plaza Park and Ride facility, and the displacement of 8 commercial businesses and 5 hotel suites. Under Alternative EC 3, displacement of The Marketplace would result in displacement of the offices of two non-profit organizations (no community resources would be displaced under Alternative EC-2). All right-of-way acquisitions and business relocations would be done in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (the Uniform Act), as well as in compliance with state relocation programs. All impacted property owners would be compensated for property rights acquired at fair market value and relocation assistance would be provided in accordance with federal or state laws, as applicable.

- **Port Properties:** Port parking, outdoor storage, and a portion of the existing vehicle access are located within the existing bridge right-of-way that is owned by the Port. The bridge approach for Alternative EC-2 would be located in this right-of-way area, displacing these uses. In addition, construction activities of the bridge approach for Alternative EC-2 would encroach onto Port property, located where the access road to the administrative office and maintenance shop is currently located; effectively eliminating this vehicle access to these buildings while this segment of the bridge is under construction. Employees and visitors accessing the administrative office during construction could park in the boat launch parking lot south of the office and then walk to the office. However, maintenance trucks and other large vehicles would still need to access the maintenance shop and would need a temporary, alternate route during construction. Once constructed, permanent access to the Port's administrative office, maintenance shop, boat launch, and parking would be realigned to the west of the existing access. Under Alternative EC-2, long-term impacts to the Port property include 1.2 acres of property acquisition and the loss of roughly 15 parking spaces supporting the administrative office and 3 parking spaces supporting the boat launch and docks. If construction or permanent impacts to either the Port's administrative office and/or maintenance shop occur that render the buildings nonfunctional, then the buildings may be required to be relocated elsewhere on Port property.
- **Treaty Fishing and Processing Sites**: The build alternatives would require temporary construction easements (0.4 acre at the White Salmon treaty fishing access site (TFAS) under Alternative EC-2, and 0.03 acre at the White Salmon TFAS and 0.1 acre at the East White Salmon Fish Processing Facility under Alternative EC-3), as well as permanent easements (0.3 acre at the White Salmon TFAS under Alternative EC-2, and 0.04 acre at East White Salmon Fish Processing Facility under Alternative EC-3). Construction impacts to the White Salmon TFAS include increased site and underwater noise, air and dust emissions, turbidity, fish and fish habitat disturbance, near-shore fishing limitations and night fishing safety hazards, and access delays and detours. Minimization measures for construction impacts include implementation of best management practices (BMPs) as well as coordination with the U.S. BIA, Columbia River Inter-Tribal Fishing Commission (CRITFC), and the four Columbia River treaty tribes in advance of and during construction activities. Currently, some tribal fishers using the White Salmon TFAS utilize the existing bridge piers to tie boats and gills nets to, which would be removed during the deconstruction of the existing bridge. Consultation with the Columbia River treaty tribes would occur regarding pier design of the replacement bridge and the continuation of tribal fishers tying up boats and gills nets to these piers. In addition, a replacement bridge could increase the potential for unauthorized access of the White Salmon TFAS, decreased privacy for residents and ceremonial activities, and increased garbage due to proximity of the new shared use path. Minimization measures for long-term impacts to the White Salmon TFAS include signage and fencing (or other barrier) to reduce unauthorized access by non-tribal members to the site and installing screening along a portion of the west side of the bridge to minimize views into and discourage throwing garbage onto the White Salmon TFAS.
- **Historic Resources:** The build alternatives would result in the deconstruction and removal of the existing Hood River Bridge, a National Register of Historic Places (NRHP) eligible structure. Physical deconstruction (demolition) of or damage to all or part of a property, as well as removal of a property from its historic location are considered examples of adverse effects under Section 106 of the National Historic Preservation Act (NHPA) (Code of Federal Regulations (CFR) 36 Part 800). Under these criteria, the build alternatives would result in an adverse effect to the bridge. A mitigation plan would be developed and implemented to preserve elements of the historic bridge; this mitigation plan would be part of a Memorandum of Agreement signed by FHWA, ODOT, the Port, Washington State DAHP, the Oregon State Historic Preservation Office (SHPO), and potentially other parties.
- **Fish Species and Habitat**: Construction of the replacement bridge would require the installation of temporary in-water and over-water work structures that would temporarily displace benthic habitat and temporarily increase overwater shading that would temporarily affect habitat suitability. In addition, elevated underwater noise has the potential to affect fish species, such as temporary avoidance of the area. The loudest source of underwater noise from construction would come from the impact installation of the structural piles. The replacement bridge would also result in an increase in the quantity of over-water coverage and shading compared to the existing bridge, which can affect habitat suitability for juvenile salmonids and other aquatic species. The two build alternatives have comparable impacts to aquatic habitat, although Alternative EC-3 would have slightly more overwater shading than Alternative EC-2 (by 0.03 acre). Minimization measures include restricting certain in-water work activities to an IWWW to avoid peak timing of presence of sensitive fish species, limiting the number of impact pile strikes per day, and construction BMPs including spill containment measures.

- **Visual Impacts:** The Hood River Bridge spans the Columbia River and is located within the Columbia River Gorge National Scenic Area (CRGNSA), which was federally established to protect the scenic, cultural, natural, and recreational resources of the Columbia River Gorge. Both build alternatives would have the same impacts on visual resources, which include temporary impacts during construction as well as long-term impacts due to the replacement bridge being slightly wider, in a slightly different location, taller, and composed of different materials than the existing bridge. Minimization measures include minimizing lighting impacts and convening a broadly representative aesthetics committee to recommend a cohesive aesthetic theme for the non-structural components of the bridge.
- **Noise and Vibration:** Both build alternatives would generate temporary noise during the 6-year construction period from activities such as clearing, grading, removing old roadways, paving, and construction of the bridge, and roadway connections. The highest noise levels would come from the impact and vibratory pile installation and removal, removal of the existing bridge, and earthwork phase. The build alternatives would be close to noise sensitive land uses including the tribal fishing access site and Bridge RV Park and Campground on the Washington side of the River and the Hood River Waterfront Trail, Hood River WaterPlay, and Best Western Hood River Inn on the Oregon side. Minimization measures include compliance with all state and local sound control and noise level rules, regulations, and ordinances, and limitations on the use of vibratory or impact hammers, hoe ramming, or blasting operations. Long-term, roadway traffic noise levels under the build alternatives would not change much over time.

All beneficial and adverse impacts are detailed in Chapter 3, Affected Environment, Environmental Consequences, and Mitigation.

Permits and Approvals Needed

The Project would require federal, state, and local permits, clearances, and approvals. The specific permits and approvals that are anticipated to be required to construct the Project are listed in Section 2.8, Permits and Approvals.

Additional Compliance Processes Underway and Unavailable Information

There are several outstanding issues that will need to be resolved prior to publishing the combined Final EIS and ROD. Issues still to be resolved include:

- Obtain a biological opinion from National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) to complete Endangered Species Act (ESA) Section 7 consultation
- Obtain a biological opinion or concurrence letter from U.S. Fish and Wildlife Service (USFWS) to complete ESA Section 7 consultation
- Complete compliance with the NHPA Section 106 process, including additional fieldwork for testing and evaluation; evaluation of any traditional cultural properties (TCPs) identified through ethnographic studies conducted by three tribes; the Oregon SHPO and Washington State DAHP concurrence on potentially eligible historic properties determinations of eligibility, findings of effect, and Historic Resources Technical Report and Cultural Resources Assessment; and, a signed Memorandum of Agreement or Programmatic Agreement to resolve adverse effects to the Hood River Bridge and other historic properties recommended as eligible and having adverse effects by the Project
- Finalize all Section 4(f) documentation with correspondence from the officials with jurisdiction and approval by FHWA
- Continuing tribal consultation to identify impacts and mitigation for cultural resources and treaty fishing rights.

Information that is unavailable for consideration in the environmental impacts analysis includes the following:

- Potential archaeological resources buried below 15 feet to 20 feet of fill on the Oregon shoreline and submerged within the Columbia River. If significant archaeological resources, including but not limited to Native American artifacts, sites, TCPs, or human remains, are present in these areas, the Project is unable to evaluate the significance of the resources, make a finding of effect, or propose mitigation before the combined Final EIS/ROD is published. Based on ethnographic studies conducted for the Project and a comprehensive literature review, it is reasonably foreseeable that archaeological resources are present within and under the riverbed as well as along the Oregon shoreline. Surveys were not completed during the EIS process in these areas due to substantial cost associated with this work.
- The Project's consistency with the CRGNSA Management Plan could not be established. The CRGNSA Management Plan (2016) specifies goals and guidelines for a Columbia River bridge replacement undertaking within the CRGNSA; however, specific criteria to evaluate a permit application to replace a bridge over the Columbia River has not been established by the Columbia River Gorge Commission (CRGC) or U.S. Forest Service (USFS). No schedule to update the CRGNSA Management Plan has been set to develop these specific criteria. Note: the CRGC adopted a revised CRGNSA Management Plan in October of 2020 but due to timing this Draft Supplemental EIS does not reflect the updated plan.
- A park boundary determination in compliance with Section 6(f) of the Land and Water Conservation Fund (LWCF) for the Port's Marina Park and Basin and Waterfront Trail could not be conducted until the design advances to a higher level. The assumed park boundary illustrated in the Supplemental Draft EIS is based on 1970s LWCF grant documents that were awarded for improvements to this site. Thus, impacts to the Section 6(f) resources were disclosed in the Supplemental Draft EIS to the extent possible. Specific determinations of Section 6(f) park land converted to a transportation use cannot be determined until the Project design is advanced and a park boundary determination is completed.

Next Steps

Next steps for the Project include the following:

- Public review of the Supplemental Draft EIS
- Review and incorporation of public and agency comments on the Supplemental Draft EIS into a combined Final EIS and ROD
- Complete additional environmental studies (if needed)
- Develop specific environmental commitments
- Decision on Selected Alternative
- Publication of the combined Final EIS and ROD

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1. PURPOSE AND NEED FOR PROPOSED ACTION

Chapter 1 introduces the Project and describes the location, history, and purpose and need of the Project. It also introduces the organization of the Supplemental Draft EIS and the next steps for the Project.

1.1. INTRODUCTION TO THE PROJECT

The Hood River Bridge provides a critical connection for residents and visitors to the CRGNSA. One of only three bridges spanning the Columbia River in this region, the bridge is a critical rural freight network facility for agriculture, forestry, heavy industry, and high-tech companies with freight originating throughout the northwest. The existing bridge is nearing the end of its serviceable life and is obsolete for modern vehicles with height, width, and weight restrictions and is also a navigational hazard for marine vessels. The bridge has no sidewalks or bicycle lanes for non-motorized travel and would likely not withstand a large earthquake. A new, replacement bridge would provide a safe and reliable way for everyone to cross or navigate the Columbia River—by car, truck, bus, bicycle, on foot, or on the water. A replacement bridge would support a thriving economy and livable communities.

The existing bridge has height and weight restrictions.

The Project was formerly named the SR-35 Columbia River Crossing Project in prior planning documents. Once the replacement bridge is constructed and open for use, then the existing Hood River Bridge would be removed.

LOCATION OF THE PROJECT

This Project spans the Columbia River between Hood River, Oregon, and Bingen and White Salmon, Washington, which is approximately 60 miles east of Portland, Oregon (Exhibit 1-1). Logical termini for the Project are at the highway connections to the north at Washington SR 14 and Exit 64 on I-84 to the south in Oregon. The bridge approaches tie into the federal, state, and local transportation facilities within the city limits of White Salmon and within the urban growth boundary of the City of Hood River.

The existing bridge is owned and maintained by the Port, which collects tolls from most vehicles; public transit vehicles are exempt.

In 2006, the Washington State Legislature established a new SR number, SR 35, to begin at the Washington-Oregon boundary line end at the northern junction with SR 14 (Revised Code of Washington [RCW] 47.17.132). This future route number could be assigned to the portion of the replacement bridge within Washington.

EXISTING HOOD RIVER BRIDGE

The existing Hood River Bridge was built in 1924. The bridge crosses the Columbia River at approximately river mile 169.8 on the Bonneville Pool. A lift span was added to the bridge in 1938 to respond to higher water elevations in the pool behind Bonneville Dam. The bridge is a steel structure with no shoulders on either side of the two travel lanes (one in each direction), which are very narrow (9 feet, 4.75 inches wide) and a height restriction of 14 feet, 7 inches. Large RVs are advised to cross at Cascade Locks or The Dalles, rather than at the Hood River Bridge, and all large vehicles are advised to turn in mirrors before crossing the bridge. Special arrangements (including flaggers and pilot cars) must be scheduled in advance for wide loads to cross the bridge. The bridge is limited to a total gross weight limit of 80,000 lbs., with each single axle limit of 20,000 lbs. The bridge has no pedestrian or bicycle facilities and pedestrians and bicycles are prohibited from using it.

The bridge is owned by the Port, serving an average of over 4 million users annually. The bridge is open 24 hours per day, except during periods of scheduled maintenance or emergency closures. Toll payment to cross the bridge is accepted by cash or prepaid electronic accounts (BreezeBy); a toll booth is at the southern end of the bridge to collect tolls for both travel directions.

Exhibit 1-1. Project Vicinity

Project History and Reason for Preparing a Supplemental Draft EIS

Funding for the feasibility study was provided through TEA-21, enacted June 9, 1998. The Southwest Washington RTC was identified as the local lead agency and partnered with the ODOT and WSDOT. The Project began in 1999, with the plan for a feasibility study to determine if there was a need to replace the bridge and whether there was community support for a bridge improvement, as shown in Exhibit 1-2. The community supported replacement of the bridge, and the feasibility study began. The feasibility study led to a reasonable range of alternatives to be evaluated in a Draft EIS. Several actions were taken by the Draft EIS project team and FHWA to gain input and involve Native American tribes in decisions about the project, including sending project newsletters, initiating consultation, and coordinating through WSDOT and ODOT tribal liaisons. The SR-35 Columbia River Crossing Draft EIS was published in 2003, which identified the "EC-2 West Alignment" as the Preliminary Preferred Alternative. The 45-day comment period on the Draft EIS included a public open house on January 22, 2004. Twelve comments submitted as letters or emails from governmental agencies and the public were received during the comment period. No comments were received from Native American tribes during the comment period for the Draft EIS. The comments addressed the following opinions and requests for additional information and coordination:

- Support for the Project and the Preliminary Preferred Alternative
- Opposed to current and future tolls
- Consider retaining existing bridge for pedestrian/bicycle use, or provide more explanation on why it cannot be retained
- Include more information on monitoring wells, abandonment of wells, water rights, and water licenses in the Project vicinity and any associated Project impacts
- Include more information on various environmental resources, such as air toxics, tribal consultation, historic properties, outreach to environmental justice populations, invasive species, vegetation surveys, and revegetation efforts, existing bridge deficiencies, and design options for the SR 14/Hood River Bridge access road
- Include rationale for eliminating alternatives that preserved the existing bridge
- Continue to work with the CRGC for compliance with the CRGNSA Management Plan
- Coordinate further with the Oregon SHPO and Washington State DAHP on the historic significance of the existing bridge

Exhibit 1-2. Project History Timeline

The environmental review phase of the Project was put on hold after the comment period ended in 2004 due to lack of funding for additional work. Requests for additional information and coordination voiced by the public during the Draft EIS phase has been incorporated into the Supplemental Draft EIS phase, which began in 2018. Detailed responses to public comments on the Draft EIS will be combined with public comments submitted on the Supplemental Draft EIS and published in the combined Final EIS/ROD.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the federal transportation bill enacted on August 10, 2005, provided funding for a Bridge Type, Size, and Location (TS&L) Study to be conducted. Between April 2010 and October 2011, the Bridge TS&L Study advanced conceptual engineering and determined preferred bridge type for the Preliminary Preferred Alternative identified in the Draft EIS. The Bridge TS&L Study recommended a fixed-span concrete segmental box girder bridge and refined the design related to stormwater, bridge hydraulics, right-of-way, river user input, and bridge construction assumptions.

In 2017, the Port received Oregon State HB 2017 funding to continue the Project. The Port is partnering with the FHWA, ODOT, and WSDOT to continue the environmental review phase. Based on a re-evaluation of the Draft EIS, FHWA concluded that some of the analysis in the Draft EIS was no longer valid because of the changes in some conditions and regulations over the passage of time. These include the designation of critical habitat for Columbia River salmon, steelhead, green sturgeon, and bull trout since the publishing of the Draft EIS, undetermined impacts for archaeological and cultural resources in the Project area, and an outdated transportation and traffic analysis. FHWA determined that preparing a Supplemental Draft EIS and then a combined Final EIS/ROD is necessary for completing the NEPA documentation and environmental review phase of the Project. FHWA published a Notice of Intent (NOI) to prepare a Supplemental Draft EIS in the Federal Register on May 23, 2019.

1.2. Purpose and Need

The intent of this section is to identify the purpose and need for the Project, which establishes why the Project is being proposed. Under NEPA, the purpose and need statement provides the basis for developing the range of reasonable alternatives for evaluation in the EIS, and ultimately with the selection a preferred alternative (Chapter 2, Alternatives).

Purpose Statement

The purpose of this Project is to improve multi-modal transportation of people and goods across the Columbia River between the communities of White Salmon and Bingen, Washington and Hood River, Oregon. The Project is intended to: a) improve traffic operations for current and future cross-river traffic and at connections to I-84 and SR 14; b) provide a cross-river connection for bicyclists and pedestrians; c) improve vehicle and freight travel safety by reducing real and perceived hazards; d) maintain and improve a transportation linkage between the White Salmon, Bingen, and Hood River communities, businesses, and services; e) fulfill the legislative directives tied to the Project funding; f) improve river navigation for vessels passing under the bridge; and g) improve the river crossing's seismic resiliency.

Need for Project

The overall need for the Project is to rectify current and future transportation inadequacies and deficiencies associated with the existing bridge. Specific needs are addressed as follows.

Present Capacity

Local Hood River Bridge users are dissatisfied with traffic congestion on the bridge as well as congestion on the bridge approaches. Traffic on the existing bridge has increased approximately 350 percent since 1970, a growth rate of approximately 4.5 percent per year. These operational issues have prompted the need to address levels of service (LOS) associated with the existing bridge, approach roads, and major highway connections, according to the SR 35 Columbia River Crossing Traffic Study (Parsons Brinckerhoff 2003) and the updated traffic analysis completed for the Project (Appendix N).

The existing lift span results in traffic delays.

High traffic volumes occur at the East Hood River I-84 interchange where Oregon 35 (OR 35)/Hood River Bridge access roadway intersects with two off-ramps from I-84 and at the Button Junction/State Street/OR 35 intersection. Moderate levels of congestion (LOS D/E and LOS C, respectively) are associated with these intersections. Seasonal traffic associated with peak windsurfing activities and poor weather conditions that divert traffic from I-84, SR 14, US 26, or OR 35 can deteriorate congestion to LOS F.

In addition, the substandard width and low load carrying capacity of the current bridge constrains the mobility of cross-river truck traffic. Each of the two travel lanes is 9.5 feet wide, which hinders large vehicle traffic and creates a perception of hazardous travel conditions for many users. For a two-lane bridge, American Association of State Highway and Transportation Officials (AASHTO) guidelines recommend a preferred minimum width of 28 feet to 30 feet to accommodate travel lanes, as well as a shared bicycle/pedestrian facility at a minimum.

Future Transportation Demand

Projected traffic for the Year 2045 indicates an increase in cross-river transportation demand of 50 percent to 55 percent over the existing conditions. The current bridge is not designed to meet this increase in vehicles, and this will exacerbate out of direction travel by vehicles.

Bicycle and Pedestrian Facilities

The Hood River Bridge does not have facilities for pedestrians or bicycle traffic, and therefore, prohibits cross-river bicycle and pedestrian traffic. The lack of bicycle and pedestrian facilities severely limits the mobility of those who do not own or have access to vehicles for cross-river trips. The ability to reduce per capita vehicle miles traveled (VMT) by alternative modes (bicycle/pedestrian) is reduced due to lack of facilities.

Safety

The narrow lanes on the Hood River Bridge create vehicle driver perception of poor driving conditions although the incidence of accidents is not high. The narrow lanes and lack of shoulders result in frequent reports of “mirror-to-mirror” collisions between wide vehicles using the bridge at the same time. These safety concerns as well as current bridge geometrics dictate that the speed limit be restricted to 25 mph. The bridge grating provides a hazardous driving surface for motorcycles.

Social Demands and Economic Development

Economic growth and development of the local communities is tied to transportation system linkage that the existing bridge provides between the two Washington cities and Hood River, Oregon, and the nearby Oregon and Washington major highways (SR 14 and I-84). Due to narrow lanes and a bridge load limitation, the existing bridge restricts the flow of goods and does not accommodate larger vehicles. The impact on truck mobility affects the movement of goods (most notably perishable goods) from local ports to local and non-local markets. Commuters and consumers are dissatisfied with the congestion and perceived safety hazards of the existing bridge.

Local and regional economic growth and development that is dependent on adequate transportation infrastructure would be enhanced by diversifying and expanding the use of this crossing rather than diverting prohibited traffic or dissatisfied users to other crossings approximately 20 miles east and west of the Hood River Bridge.

Legislation

The Project has received federal and state funding to study the feasibility of rebuilding or replacing the existing bridge, develop conceptual design of the bridge and associated roadways, and complete the environmental review process in compliance with NEPA. Specifically, the Washington State congressional delegation responded to local constituents’ concerns about the functionality of the existing bridge and obtained federal funding for this high-priority Project as part of the TEA-21 federal transportation-financing bill (1997). In 1997, the Washington State legislature recognized the potential for a replacement Columbia River crossing and designated an SR 35 corridor that connects from SR 14 to the Columbia River (RCW 47.17.132). In 2005, additional funding to advance the Project was appropriated in the SAFETEA-LU federal surface transportation bill. More recently, the Oregon State Legislature authorized funding for the Project as part of Oregon HB 2017 to advance the Project through NEPA completion.

River Navigation

The bridge has a horizontal navigation clearance of 246 feet, which is less than the U.S. Congressionally authorized 300-foot wide navigation channel (PB Ports and Marine 2003) and creates difficulties for vessel navigation due to the narrowness of the opening. Moreover, the current channel is not effectively aligned with westerly winds. Barges using the Columbia River navigation channel typically measure 42 feet wide with doublewides at 84 feet. While barge lengths vary between 150 feet and 300 feet, lock sizes limit tow configurations (tugboat and its connected barges) to a total length of 650 feet. During significant winds, tugboat pilots must tack through the bridge with the winds pushing the barges sideways. This difficulty is compounded with the bridge opening being narrower than the navigation channel. Although these navigation factors are less than optimal, the existing bridge accommodates river traffic use without recording any accidents that resulted in severe damage or loss of life. The bridge's vertical clearance is 57 feet in the closed position of the lift span and up to 148 feet in the fully lifted position. There is no hindrance to marine vessels with respect to vertical clearance.

Marine vessels must carefully navigate the narrow navigation channel under the existing bridge.

The substandard horizontal clearance for navigation under the current bridge has contributed to minor collisions of river vessels with the bridge. Over the past 7 years, the Port recalled that several barges have scraped through the bridge opening but not caused any substantial damage. In October 2017, a vessel collided with the north bridge pier supporting the lift span. Bridge lifts were suspended until an assessment was completed to confirm the degree of damage. Reports of near misses with the bridge are prevalent among river vessel pilots. However, no major collisions have been reported to the USCG.

Marine vessel collisions with the existing bridge have damaged bridge piers.

Seismic Deficiencies

The existing bridge is functionally obsolete, does not meet current seismic standards, and is vulnerable to a seismic event. Several bridge inspections have been completed for the Port on the existing bridge; however, federally funded programs that involve improvements to the existing bridge will likely require an updated bridge inspection. Structural deficiencies identified in a future bridge inspection may need to be addressed by making improvements to the existing bridge.

1.3. GOALS AND OBJECTIVES

The intent of this section is to identify goals and objectives that balance environmental and transportation values over the long-term while meeting the purpose and need for the proposed action. The goals and objectives are to:

- Improve cross-river multi-modal transportation of people and goods
- Meet current standards for river navigation if any new facility is constructed
- Avoid, minimize, or compensate for impacts to the natural, built, and aesthetic environment
- Avoid, minimize, or compensate for impacts to fish and wildlife and their habitats
- Avoid, minimize, or compensate for impacts to recreational users and facilities
- Be financially feasible and support local economic development
- Avoid, minimize, or compensate for impacts on cultural and historical resources
- Maintain the integrity of the interstate highway system

The proposed action would apply mitigation measures during the design and construction phases by first attempting to avoid impacts to the environment where practicable, minimize impacts that cannot be avoided, and lastly, compensate for impacts that cannot be avoided.

1.4. Organization of the Supplemental Draft EIS

The Supplemental Draft EIS is organized by the following major topics:

- Chapter 1: Purpose and Need for the Proposed Action introduces the Project, the Project purpose and need, organization of the Supplemental Draft EIS, and next steps
- Chapter 2: Alternatives describes the alternatives assessed in the Supplemental Draft EIS, provides rationale for alternatives dismissed, identifies the Preferred Alternative, and lists anticipated permits and approvals
- Chapter 3: Affected Environment, Environmental Consequences, and Mitigation describes the affected environment for environmental resources, impacts and benefits of the alternatives, and measures to avoid, minimize, or mitigation impacts
- Chapter 4: Cumulative Impacts assesses the potential for the Project, in combination with other current and reasonably foreseeable actions, to contribute to cumulative impacts on environmental resources
- Chapter 5: Public Involvement and Agency Coordination documents public outreach and agency coordination that occurred for the Draft EIS and for the Supplemental Draft EIS
- Chapter 6: Section 4(f) Analysis evaluates the potential for use of resources protected under Section 4(f) of the U.S. Department of Transportation (DOT) Act
- Chapters 7-10 provide a list of preparers, the Supplemental Draft EIS distribution list, references, a glossary, and the index

1.5. Next Steps

Public Review of the Supplemental Draft EIS

The Supplemental Draft EIS will be available for public review and comment for 45 days. Chapter 8 provides a list of the agencies, tribes, and organizations that will receive copies of the Supplemental Draft EIS. The Notice of Document Availability in the front of this document includes a list of locations where members of the public may review a printed copy of the Supplemental Draft EIS. The Supplemental Draft EIS will also be available for public review on the Project website. Information on how to submit public comments will be provided with the printed copies and on the Project website.

Selected Alternative, Final EIS and ROD

Comments on the Supplemental Draft EIS that are received from agencies, tribes, and the public will be reviewed and incorporated into the decision-making process to determine the Selected Alternative, which will be published in a combined Final EIS and ROD.

Additional environmental studies, if needed, will also be completed and specific environmental commitments will be developed. The Final EIS will include and address comments received on the Draft EIS and Supplemental Draft EIS during the respective public comment periods. The ROD will document the course of action for implementation. The ROD will identify the selected Alternative, the rationale for selection, and environmental commitments to address adverse impacts. The environmental commitments stipulated in the ROD will become a formal part of the Project record as obligations required for the Project owner or contractor to implement. FHWA, ODOT, and the Port intend to prepare a combined Final EIS/ROD.

Project Implementation

After the Final EIS/ROD is issued and funding becomes available, right-of-way acquisition, final design, permitting, and construction will occur.

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2. ALTERNATIVES

Chapter 2 provides detailed descriptions of the alternatives analyzed in the Supplemental Draft EIS, information about the development and screening of alternatives, rationale for alternatives that were considered but dismissed, and a list of permits and approvals that will need to be obtained for constructing the Preferred Alternative.

2.1. DESCRIPTION OF ALTERNATIVES

Three alternatives are being evaluated to address the Project's purpose and need:

- No Action Alternative
- Preferred Alternative EC-2
- Alternative EC-3

Exhibit 2-1 shows the alignment of the existing bridge, which represents the No Action Alternative, and the two build alternatives. The build alternatives connect to SR 14 in White Salmon, Washington, and Button Bridge Road in Hood River, Oregon, just north of the I-84/US 30 interchange (Exit 64).

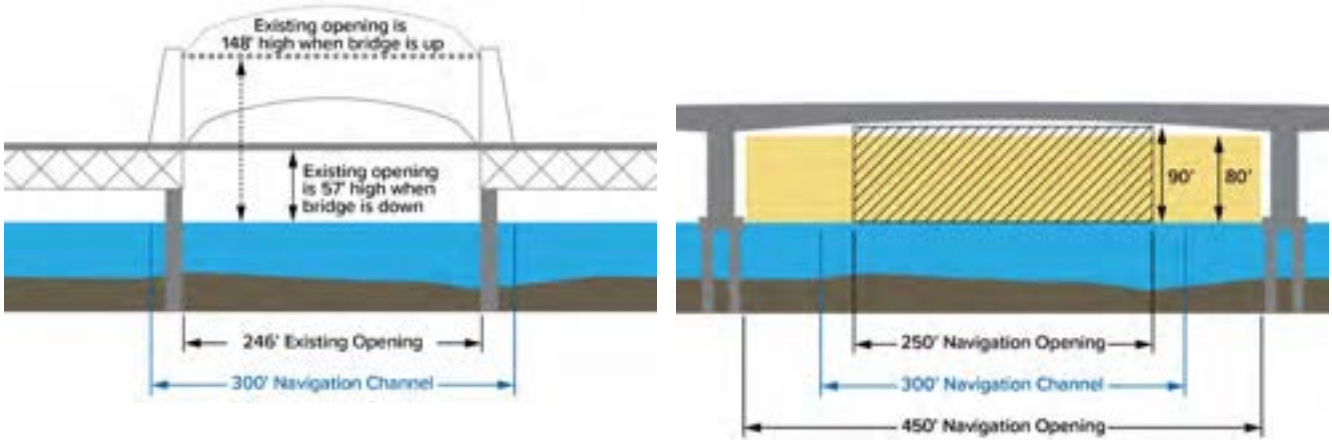
Each alternative is summarized in Exhibit 2-2 and described in more detail in the following sections. Exhibit 2-3 illustrates the navigational clearance for the existing bridge and the replacement bridge (same for each build alternative).

Exhibit 2-1. Location of the Preferred Alternative EC-2 and Alternative EC-3

Exhibit 2-2. Summary Comparison of Key Elements of Alternatives

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Bridge alignment	No change	Slightly west of existing	Slightly east of existing
Bridge structure			
Bridge type	Steel deck truss bridge with vertical lift span	Segmental concrete box girder bridge (fixed span)	
Total number of piers (in water/on land)	28 (20/8)	13 (12/1)	
Structure length	4,418 feet	4,412 feet	4,553 feet
Travel lanes	9-foot 4.75-inch lanes	12-foot lanes	
Roadway shoulders	No shoulders	8-foot shoulders	
Vehicle height limit	14 feet-7 inches	None	
Shared Use Path	None	12-foot wide, only on west side with overlooks	
Bridge deck	Steel-grated	Concrete	
Vehicle Gross Weight Limit	80,000 lbs.; no trip permit allowance for overweight vehicles	> 80,000 lbs., with approved trip permit	
Design speed	Unknown	50 mph	
Posted speed	25 mph	35 mph	
Toll collection	Toll booth on Oregon side	Electronic tolling/No toll booth	
Stormwater treatment	None	Detention and water quality treatment	
Navigation clearance	246 feet horizontal by 57 feet vertical when bridge is down and up to 148 feet vertical when lifted	450 feet horizontal x 80 feet vertical (maximum horizontal opening) 250 feet horizontal x 90 feet vertical (centered within maximum vertical opening)	
SR 14/Hood River Bridge intersection	Signalized intersection	Roundabout slightly west of existing intersection; SR 14 raised approximately 2 feet above existing road level	Roundabout slightly east of existing intersection; SR 14 remains at existing road level
Button Bridge Road/E. Marina Way intersection	Signalized intersection	Signalized intersection	
Anticipated construction duration	None	6 years (3 years to construct the replacement bridge and 3 years to remove the existing bridge)	

Exhibit 2-3. Navigation Clearance of Existing Bridge and Proposed Replacement Bridge



Existing Bridge

Proposed Replacement Bridge

No Action Alternative

The No Action Alternative would retain the existing bridge in its existing condition and configuration. Routine operations would continue, and maintenance would be implemented to continue operations. Under the No Action Alternative, elements of the existing bridge include:

- **Alignment**: The bridge would continue to span the Columbia River between its northern terminus at the SR 14/Hood River Bridge intersection in White Salmon, Washington, and its southern terminus at the Button Bridge Road/E. Marina Way intersection in Hood River, Oregon, as shown in the aerial photograph in Exhibit 2-1.
- **Type**: The bridge would continue to be a 4,418-foot steel deck truss bridge with a vertical lift span. The bridge would continue to have 20 piers in the Columbia River.
- **Ownership**: The bridge will continue to be owned and operated by the Port.
- **Vehicle lanes**: The bridge will continue to have one narrow (9 feet, 4.75 inches) travel lane in each direction and no shoulders.
- **Bicycle and pedestrian facilities**: The bridge would continue to have no pedestrian or bicycle facilities, and signage would continue to prohibit pedestrians and bicycles on the bridge.
- **Speed**: The posted speed limit on the bridge would continue to be 25 mph.
- **Vehicle restrictions**: Vehicles would continue to be weight-restricted to 80,000 lbs.; vehicles with approved trip permits would still not be allowed to use the bridge. Wide loads would continue to be prohibited without special arrangements, and large vehicles would be encouraged to turn their mirrors in. The height limit for vehicles would continue to be 14 feet, 7 inches where the lift span occurs.
- **Tolling**: The bridge would continue to be tolled for all vehicles with a toll booth on the south end of the bridge and electronic tolls collected through the Port's Breezeby system. Plans to shift to all ETC are being considered, but there is no certainty they will be implemented.
- **Navigational clearance**: The horizontal clearance for marine vessels would continue to be 246 feet, narrower than the navigation channel width of 300 feet, as shown in Exhibit 2-3. The vertical clearance would continue to be 57 feet when the lift span is down and 148 feet when it is raised; vessels would continue to be required to request bridge lifts in advance. The lift span section would continue to use gate and signals to stop traffic for bridge lifts.
- **Seismic resilience**: The bridge would continue to be seismically vulnerable and would not be cost effective to be seismically retrofitted.
- **Stormwater**: No stormwater detention or water quality treatment would be provided for the bridge. Stormwater on the bridge would continue to drain directly into the Columbia River through the steel-grated deck.

- **Roadway connections**: The bridge would continue to connect to SR 14 on the Washington side at the existing signalized SR 14/Hood River Bridge intersection. On the Oregon side, the southern end of the bridge would continue to transition to Button Bridge Road, connecting to the local road network at the existing signalized Button Bridge Road/E. Marina Way intersection north of I-84. The bridge would continue to cross over the BNSF Railway tracks on the Washington side and over the Waterfront Trail along the Oregon shoreline.
- **Bicycle and pedestrian connections**: The bridge would continue not to provide bicycle or pedestrian connections across the Columbia River. Bicyclists and pedestrians wanting to cross the river would continue to need to use an alternate means of transportation, such as the Mt. Adams Transportation Service (MATS) White Salmon/Bingen to Hood River bus (buses provide bicycle racks), or a private vehicle.

The Supplemental Draft EIS considers two scenarios for the No Action Alternative:

- **End of bridge lifespan**: assumes that the existing Hood River Bridge would remain in operation through 2045[2] and would be closed sometime after 2045 when maintenance costs would become unaffordable. At such a time, the bridge would be closed to vehicles and cross-river travel would have to use a detour route approximately 21 miles east on SR 14 or 23 miles east on I-84 to cross the Columbia River using The Dalles Bridge (US 197). Alternatively, vehicles could travel 25 miles west on SR 14 or 21 miles west on I-84 to cross the Columbia River via the Bridge of the Gods. When the bridge would be closed, the lift span would be kept in a raised position to support large vessel passage that previously required a bridge lift or the existing bridge would be removed.
- **Catastrophic event**: addresses the possibility that an extreme event that damages or otherwise renders the bridge inoperable would occur prior to 2045. Such events could include an earthquake, landslide, vessel strike, or other unbearable loads that the bridge structure cannot support.

Preferred Alternative EC-2

Alternative EC-2 would construct a replacement bridge west of the existing bridge. The existing bridge would be removed following construction of the replacement bridge. Under Alternative EC-2, elements of the replacement bridge would include:

- **Alignment**: The main span of the bridge would be approximately 200 feet west of the existing lift span. The bridge terminus in White Salmon, Washington, would be located approximately 123 feet west of the existing SR 14/Hood River Bridge intersection, while the southern terminus would be in roughly the same location at the Button Bridge Road/E. Marina Way intersection in Hood River, Oregon, as shown in Exhibit 2-4 and Exhibit 2-5.
- **Type**: The bridge would be a 4,412-foot fixed-span segmental concrete box girder bridge with a concrete deck and no lift span. The bridge would have 12 piers in the Columbia River and one land-based pier on the Washington side of the river.
- **Ownership**: While the Port may own and operate the replacement bridge, other options for the ownership and operation of the replacement bridge that may be considered include other governmental entities, a new bi-state bridge authority, and a public-private partnership, depending on the funding sources used to construct the replacement bridge.
- **Vehicle lanes**: The bridge would include one 12-foot travel lane in each direction, an 8-foot shoulder on each side, as shown in Exhibit 2-6.
- **Bicycle and pedestrian facilities**: The bridge would include a 12-foot wide shared use path separated from traffic with a barrier on the west side, as shown in Exhibit 2-6. In the middle of the bridge the shared use path would widen an additional 10 feet in two locations to provide two 40-foot long overlooks over the Columbia River and west into the CRGNSA with benches; the overlook locations are shown in Exhibit 2-4 and Exhibit 2-5. The cross-section of the overlooks is shown in Exhibit 2-6.
- **Speed**: The design speed for the bridge would be 50 mph with a posted speed limit of 35 mph.
- **Vehicle restrictions**: Vehicles would no longer be limited by height, width, or weight. Vehicles exceeding 80,000 lbs. that have approved trip permits could use the bridge.

[2] The year 2045 is the design horizon for the Project. The design horizon is the year for which the Project was designed to meet anticipated needs.

- **Tolling**: Tolls for vehicles would be collected electronically so there would be no toll booth on either side of the bridge. No tolls would be collected from non-motorized users (e.g., pedestrians, bicyclists) who travel on the shared use path.
- **Navigational clearance**: Vertical clearance for marine vessels would be a minimum of 80 feet. The horizontal bridge opening for the navigation channel would be 450 feet, greater than the existing 300-foot wide federally-recognized navigation channel, as shown in Exhibit 2-3. Centered within this 450-foot opening, there would be a 250-foot wide opening with a vertical clearance of 90 feet. Similar to the existing bridge, the replacement bridge would cross the navigation channel at roughly a perpendicular angle as shown in Exhibit 2-4 and Exhibit 2-5.
- **Seismic resilience**: The bridge would be designed to be seismically sound under a 1,000-year event and operational under a Cascadia Subduction Zone earthquake.
- **Stormwater**: Stormwater from the entire Project area (bridge and improved roadways) would be collected and piped to detention and treatment facilities on both sides of the bridge as shown in Exhibit 2-5. On the Washington side, separate stormwater facilities would be used for the roadways and the bridge.
- **Roadway connections**: The bridge would connect to SR 14 on the Washington side at a new two-lane roundabout slightly west of the existing SR 14/Hood River Bridge intersection, as shown in Exhibit 2-5. On the Oregon side, the southern end of the bridge would transition to Button Bridge Road, connecting to the local road network at the existing signalized Button Bridge Road/E. Marina Way intersection north of I-84. The private driveway on Button Bridge Road north of E. Marina Way may be closed under this alternative. Like the existing bridge, the replacement bridge would cross over the BNSF Railway tracks on the Washington side and over the Waterfront Trail along the Oregon shoreline.
- **Bicycle and pedestrian connections**: The new shared use path would connect to existing sidewalks along the south side of SR 14 in Washington and to roadway shoulders (for bicyclists) on both sides of SR 14 at the new roundabout with marked crosswalks, as shown in Exhibit 2-5. On the Oregon side, the shared use path would connect to existing sidewalks, bicycle lanes, and local roadways at the signalized Button Bridge Road/E. Marina Way intersection.
- **Cost**: Total Project construction cost is estimated to be $300 million in 2019 dollars.

Exhibit 2-4. Preferred Alternative EC-2 Alignment

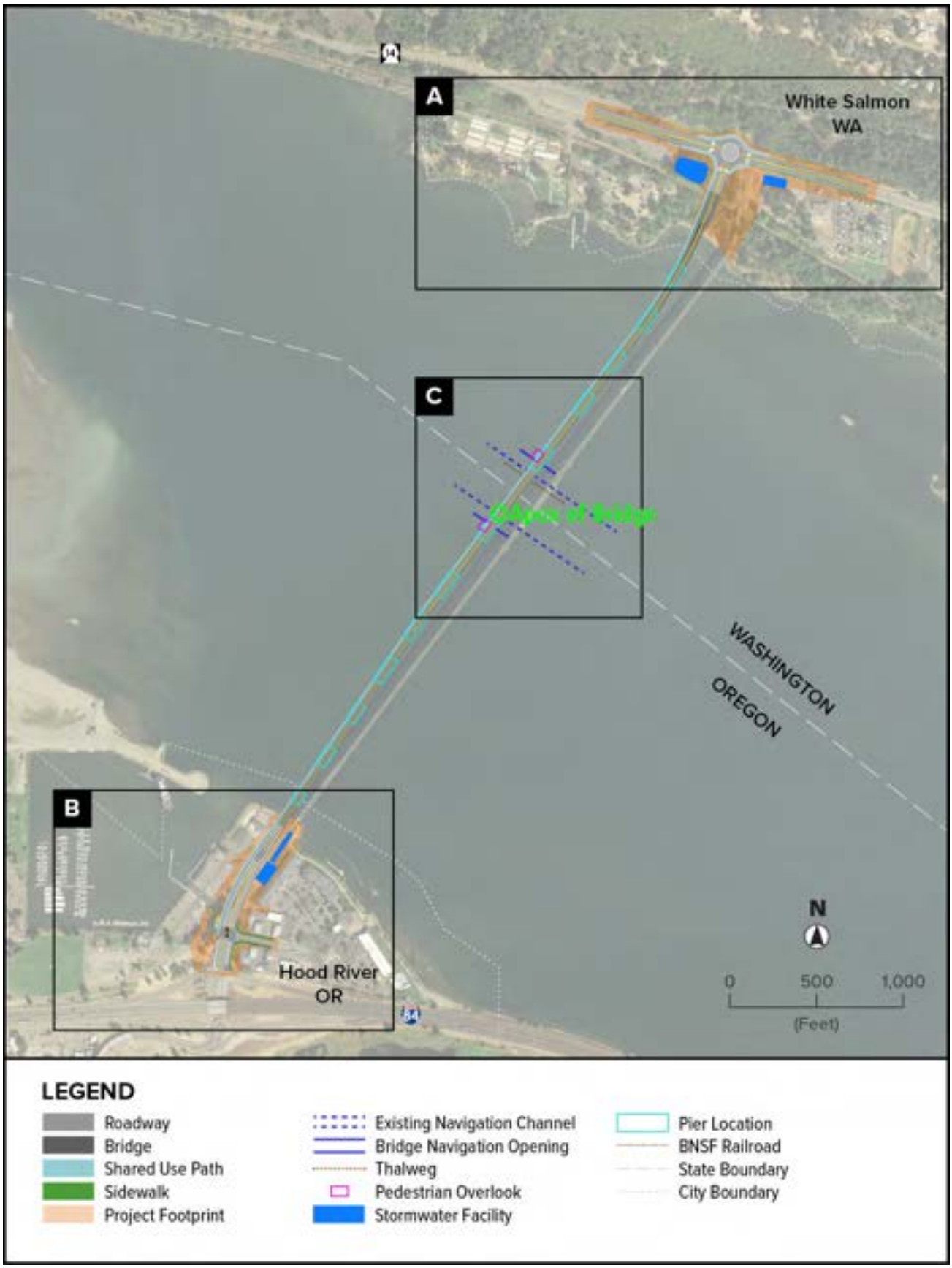


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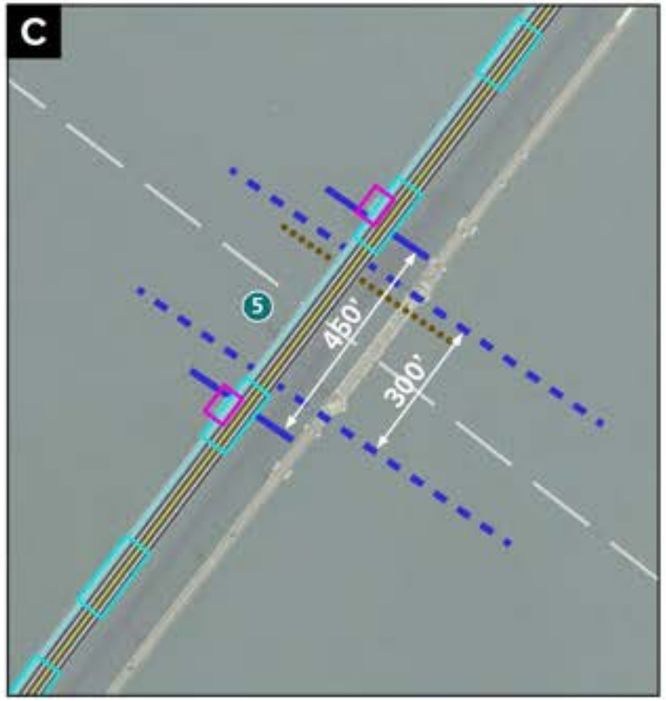
Exhibit 2-5. Preferred Alternative EC-2 Enlargements



1. New two-lane roundabout with marked crosswalks
2. New shared use path across bridge
3. New stormwater detention and water quality treatment facilities
4. Elimination of toll booth
5. New wider bridge opening crosses navigation channel at a perpendicular angle

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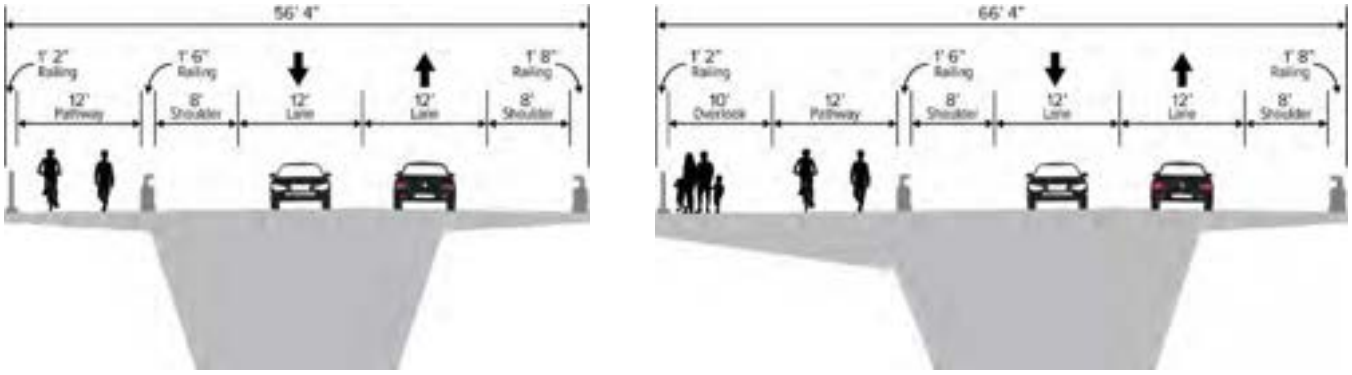
Exhibit 2-6. Replacement Bridge Cross-Sections



Typical

With Pedestrian Overlook

ALTERNATIVE EC-3

Alternative EC-3 would construct a replacement bridge east of the existing bridge. Like Alternative EC-2, the existing bridge would be removed following construction of the replacement bridge. Exhibit 2-7 shows alignment of Alternative EC-3 and Exhibit 2-8 provides enlargements of the improvements that would be constructed under Alternative EC-3.

Like Preferred Alternative EC-2, the total Project construction cost for Alternative EC-3 is estimated to be $300 million in 2019 dollars. Under Alternative EC-3, elements of the replacement bridge would be the same as the elements described for Alternative EC-2 except:

- **Alignment**: The main span of the bridge would be approximately 400 feet east of the existing lift span. The bridge terminus in White Salmon, Washington, would be located approximately 140 feet east of the existing SR 14/Hood River Bridge intersection, while the southern terminus would be roughly the same as the existing terminus at the Button Bridge Road/E. Marina Way intersection in Hood River, Oregon.
- **Type**: The bridge would be a 4,553-foot fixed-span segmental concrete box girder bridge with a concrete deck and no lift span. Like Alternative EC-2, the bridge would have 12 piers in the Columbia River and one land-based pier on the Washington side of the river.
- **Roadway connections**: Connections to roadways would generally be the same as Alternative EC-2, but the bridge would connect to SR 14 on the Washington side at a new two-lane roundabout slightly east of the existing SR 14/Hood River Bridge intersection. On the Oregon side, improvements extend slightly further south to the Button Bridge Road/I-84 on and off ramps. The private driveway on Button Bridge Road north of E. Marina Way would be closed under this alternative.
- **Bicycle and pedestrian connections**: Connections to bicycle and pedestrian facilities would generally be the same as Alternative EC-2, but the roundabout intersection with SR 14 on the Washington side would be located approximately 264 feet further east than under Alternative EC-2.

Exhibit 2-7. Alternative EC-3 Alignment

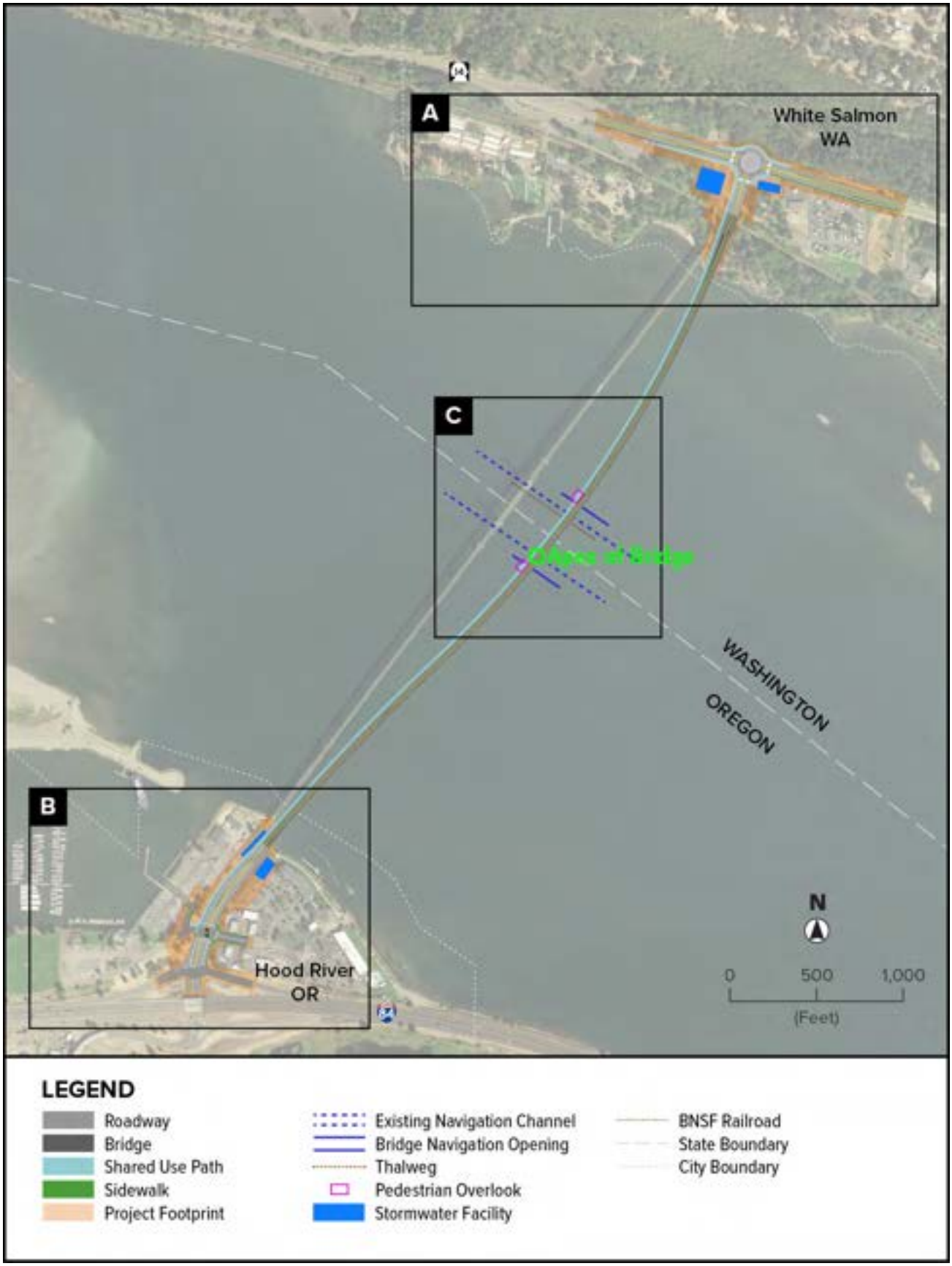
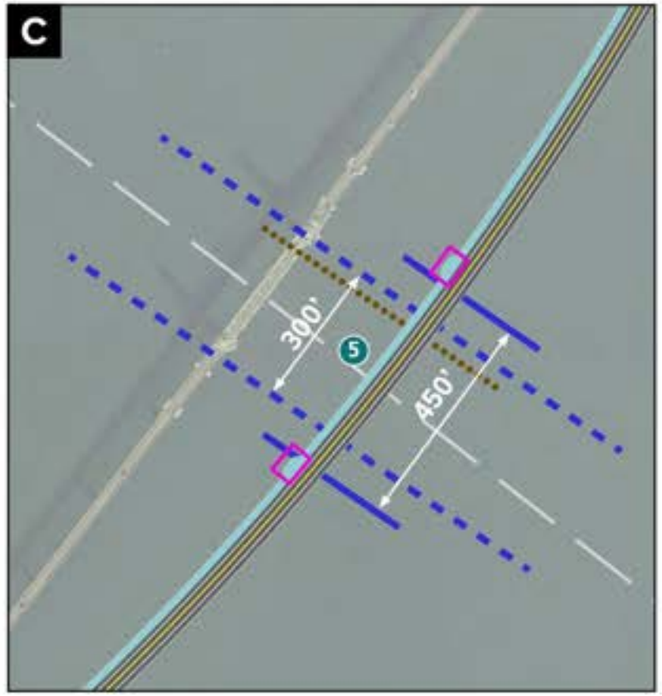


Exhibit 2-8. Alternative EC-3 Enlargements



1. New two-lane roundabout with marked crosswalks
2. New shared use path across bridge
3. New stormwater detention and water quality treatment facilities
4. Elimination of toll booth
5. New wider bridge opening crosses navigation channel at a perpendicular angle

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2.2. CONSTRUCTION OF THE BUILD ALTERNATIVES

Construction of the build alternatives would be similar in duration and approach.

- **Timeline and sequencing**: The NEPA process is anticipated to be complete in 2021; subsequent phases of the Project would be dependent on funding availability. Construction would take approximately 6 years and would require work during approximately six IWWWs. Approximately three IWWWs would be necessary to construct the replacement bridge, and approximately three additional IWWWs would be necessary to complete the removal of the existing bridge.
- **In-water work window**: Certain construction and removal activities conducted below the OHWM of the Columbia River would be restricted to an IWWW established for the Project. The IWWW would be established in permits for the Project through inter-agency coordination including Washington Department of Fish and Wildlife (WDFW), Oregon Department of Fish and Wildlife (ODFW), NOAA Fisheries, and USFWS. Preliminary discussions with these agencies indicate that the authorized IWWW would likely be October 1-March 15 of each year. In-water work activities that would be restricted to this IWWW would include vibratory and impact pile installation, installation of drilled shaft casings, installation of cofferdams, and unconfined wiresaw removal of the existing pier foundations. Vibratory pile removal would not be restricted to the IWWW.
- **Mobilization and site preparation**: The contractor would likely mobilize equipment to the construction site via barges and trucks. Erosion control measures (e.g., silt fences, etc.) and debris containment devices (i.e., floating debris booms) would be installed and clearing and grubbing limits would be established prior to vegetation removal. Barges would require anchoring, tethering, and spudding.
- **Construction staging**: At least two staging areas would be necessary for staging and storage of materials and equipment; the location of these areas would be determined later in the design process, including obtaining all relevant environmental permits and land use approvals. It is estimated that a minimum of 2 acres would be necessary for staging and storage of materials and equipment. Materials arriving by barge may be offloaded to upland staging areas or may be temporarily stored on barges. All staging areas and equipment fueling areas would be located above the OHWM and outside of environmentally sensitive areas. Staging and temporary access areas will occur in upland locations, on areas that are either already disturbed or that will be restored post-Project.
- **Temporary work structures**: The Project would likely require the installation of several temporary in-water structures during construction and removal of the existing bridge. These structures would include temporary work bridges, cofferdams, drilled shaft casings, and temporary piles. These temporary features would be designed by the contractor after a contract is awarded, but prior to construction.

  Three temporary work bridges would likely be installed to support construction activities. One temporary work bridge would be installed at each end of the replacement bridge alignment. A third temporary work bridge would be constructed on the Washington side of the river to support the removal of the existing bridge. These temporary structures would likely be supported by 24-inch steel pipe piles.

  Additional temporary piles would be necessary throughout construction and removal of the existing bridge for a variety of purposes, including supporting falsework and formwork, pile templates, reaction piles, and for barge mooring. These temporary piles would also likely be 24-inch steel pipe piles.

  Barges would be used as platforms to conduct work activities and to haul materials and equipment to and from the work site. Three barges would typically be needed at each pier during drilled shaft construction, and at least one barge would remain at each pier after shaft construction to support column and superstructure construction.

  Temporary cofferdams would likely be installed to create isolated in-water work areas for certain activities. A temporary cofferdam would likely be installed to create an isolated in-water work area for construction of a spread footing foundation on the Washington shoreline. Sheet pile cofferdams may also be installed at one or more piers on the existing bridge to create an isolated work area for removal of the existing bridge foundations.

  Drilled shaft casings would also be installed as temporary work structures to create isolated work areas for drilled shaft construction. An outer steel casing, with a diameter approximately 12-inches larger than that of the finished drilled shaft, would be installed to act as an isolation structure. The outer cases will be 84 inches in diameter for the 72-inch shafts, and 108 inches in diameter for the 96-inch shafts.

- **Work area isolation and fish salvage**: To minimize impacts to fish, fish salvage measures would be employed to remove fish from temporarily isolated in-water work areas during and after the installation of drilled shaft casings and cofferdams. Fish salvage would follow the BMPs established in the biological opinion for FHWA and ODOT's Federal Aid Highway Program programmatic consultation and would be supervised by a fish biologist. A fish biologist with the experience and competence to ensure the safe capture, handling, and release of all fish would supervise all fish capture and release. To minimize take, efforts would be made to capture ESA-listed fish known or likely to be present in an in-water isolated work area using methods that are effective, minimize fish handling, and minimize the potential for injury. Attempts to seine and/or net fish, or the use of minnow traps shall precede the use of electrofishing equipment. Isolation structures would be installed such that they would not be overtopped by high water. A reasonable effort would be made to re-locate threatened or endangered fish using methods that minimize the risk of injury.
- **Bridge foundation installation**: The foundations for the replacement bridge would consist of three different foundation types: 1) pile-supported foundations; 2) drilled-shaft-supported foundations; and 3) spread footings. In general, pile-supported foundations would be used at locations where the depths to bedrock are relatively deep (greater than 50 feet below ground surface) while drilled shaft-supported foundations would be more economical in locations where depths to bedrock are nearer to the surface (less than 50 feet below ground surface). Spread footings would be used where bedrock is located at or near the surface and deep foundations are not required.

  Pile-supported foundations would be supported by 48-inch diameter steel pipe piles. The typical in-water foundation would require 25 piles, where-as smaller terrestrial pile-supported foundations would require fewer piles. Piles would be installed with a vibratory hammer to the extent practicable, as a means of minimizing impacts associated with underwater noise. An impact hammer would be used to drive the piles to the final tip elevation, and/or to proof the piles to verify load-bearing capacity.

  Drilled shaft-supported foundations would be supported by either 72-inch-diameter drilled shafts or 96-inch-diameter drilled shafts. The larger-diameter drilled shafts would be used on the bents that flank the navigation channel. Installation of drilled shafts would be conducted by first oscillating an outer steel casing to a specified design depth. As the casing is being advanced to the design depth, soil would be removed from inside the casing using an auger and clamshell. Excavated soils would be temporarily placed onto a barge with appropriate containment and ultimately placed at an approved upland site. Once the interior of the casing has been excavated to the design depth, an interior steel casing of the finished diameter of the shaft would be installed. This casing would be installed either with an oscillator or vibratory hammer. Once the interior casing has been installed to final depth, a steel reinforcement cage would be installed within the casing, and the shaft would be filled with concrete.

  Construction of spread footing foundations below the OHWM of the river would be conducted within a temporarily dewatered work area within a cofferdam. Once the cofferdam is installed and the work area established, formwork would be installed for the spread footing, steel reinforcing would be installed within the forms, and the concrete for the footing would be poured. The cofferdam would remain in place until the concrete is fully cured to allow the concrete to cure in a dewatered environment. Once the concrete for the footing is fully cured, the formwork would be removed followed by the temporary cofferdam.
- **Bridge superstructure construction**: Once the foundation piles and drilled shafts are installed, a concrete pile cap would be installed atop the shafts at the waterline, and the concrete pier and superstructure would be installed atop the pile cap. Pile caps may be either precast or cast-in-place.

  The superstructure would consist of both precast and cast-in-place concrete segments. Additional finish work would also be conducted, including surfacing, paving, and installation of other finish features, such as striping and signage.

  Work on the superstructure would be conducted either from the bridge deck, from the deck of temporary work bridges, or from barges. It is anticipated that the superstructure would be constructed using a balanced cantilever method that uses paired sets of form travelers to build outwards from each pier. It is assumed that a contractor may operate up to four pairs of form travelers at a given time to expedite the construction of the superstructure.

  Many of the bridge superstructure components would be composed of precast concrete. Precast elements would likely include bridge columns, beams, girders, and deck panels. Precast bridge elements would be constructed in upland controlled environments and would be transported to the Project site by either barge or truck.

» Dismantling and removal of the existing bridge: The existing bridge would remain open until the replacement bridge is constructed and operational, at which point it would be dismantled and removed. This work would be conducted via barges and/or temporary work platforms and may require in-water isolation.

Removal of the superstructure would most likely be conducted by barge-mounted cranes. Removal of the superstructure would likely begin with removal of the counterweights, followed by the lift towers and the individual truss sections. The lift towers and truss sections would be cut into manageable pieces and loaded onto barges or trucks by a crane. Each section would then be either transported to an upland site for further dismantling or disposed of directly at an appropriately permitted upland facility.

Removal of the existing foundations would be conducted by one of the following two methods:

- » Wiresaw removal to mudline, without a cofferdam. A diamond wire/wire saw would be used to cut the foundation into manageable pieces that would be transported to a barge and disposed of in a permitted off site upland location. The foundations would be removed to the mudline and the substrate would be naturally restored with surrounding sediments.
- » Wiresaw or conventional pier removal techniques within a cofferdam. Conventional removal techniques consist of using a hydraulic ram to break the piers into rubble, and torches or other cutting methods to cut reinforcement. Materials would then be transported to a barge and disposed of in a permitted off site upland location. The foundations would be removed to the mudline and the substrate would be naturally restored with surrounding sediments.

It is assumed that the cofferdam removal option would be used at both piers that flank the navigation channel, but may also be used in other pier locations. At the two navigation channel piers, once cofferdams are installed and fish salvage has occurred, approximately 7,800 cubic yards of existing riprap would be removed. Riprap would be removed via a barge mounted clamshell, and loaded onto barges, and disposed of at an off-site permitted upland location. Once riprap has been removed, the existing piers would either be removed using one of the methods described above.

» Post-Project site restoration: Construction of the Project would result in temporary impacts to native and non-native vegetation on both the Oregon and Washington sides of the river. Areas temporarily disturbed during construction would be restored upon completion of the Project consistent with state and local regulations.

On the Oregon side of the river, most temporary disturbance would occur within areas that are either impervious or already developed. Temporary disturbance would occur within areas that consist of landscaping, lawns, or similar heavily managed vegetation. Post-Project site restoration in these areas would likely consist of replacement landscaping with similar ornamental species. No native plant communities would be disturbed on the Oregon side of the river.

On the Washington side of the river, vegetation would be cleared within temporary work zones to allow construction equipment to access the site, to construct the replacement bridge abutments and stormwater treatment facilities, and to remove the existing bridge. A portion of the area to be cleared would be within a forested riparian area that is within the 200-foot shoreline jurisdiction of the Columbia River, and is regulated by the City of White Salmon under its Shoreline Master Program (City of White Salmon 2016). A large oak tree that is present east of the existing bridge would be preserved and would not be affected.

Temporarily disturbed areas within ODOT and WSDOT rights-of-way would be replanted consistent with applicable ODOT and WSDOT requirements and design standards. Temporarily disturbed vegetation within the riparian shoreline buffer on the Washington side of the river would be conducted consistent with requirements in the City of White Salmon Critical Areas Ordinance (White Salmon Municipal Code [WSMC] Chapter 18.10) and Shoreline Master Program (City of White Salmon 2016).

» Compensatory Mitigation: The Project would result in permanent impacts to wetland and aquatic habitats, and a compensatory mitigation plan would likely be required by federal, state and local regulations to offset these permanent impacts. The compensatory mitigation plan would be developed during the permitting phase of the Project. The mitigation plan would identify the amount, type, and specific locations of any proposed compensatory mitigation actions, specific impact avoidance and minimization measures to be implemented, as well as the goals, objectives, and performance standards for measuring success. Full implementation of the compensatory mitigation plan would be a condition of the applicable permits of the agencies with jurisdiction (i.e., USACE Section 404 permit, the Oregon Department of Environmental Quality [DEQ] and the Washington State Department of Ecology [Ecology] Section 401 permits, the Oregon Department of State Lands [DSL] Removal-Fill permit, WDFW Hydraulic Project

Approval, and City of White Salmon Shorelines and Critical Areas permits), and the mitigation would comply fully with all applicable permit terms and conditions.

The method of delivery for Project final design and construction has not been determined at this time. Traditional delivery methods, such as design-bid-build, and alternative delivery methods, such as design-build and public-private-partnerships to name a few, will continue to be considered by the Port. As part of Oregon's HB 2017, the Port was provided legal authority by the state to enter into a public-private-partnership.

2.3. Alternatives Development and Screening

A wide range of alternatives was considered in developing the Draft EIS. The alternatives considered included six different corridors to cross the Columbia River, specific alignments within the corridors, and various transportation type of facilities. The alternatives considered during the screening process but not advanced to the Draft EIS are summarized in Section 2.4, Alternatives Considered but Dismissed.

The development and screening of alternatives was organized into three sequential tiers.[3] Tier I involved evaluation and narrowing of a range of crossing corridors and facility types. Tier II began with alternatives advanced from Tier I. Two successive screenings occurred during the Tier II and resulted in a further narrowing of the alternative corridors and facilities and the identification of three alternative alignments to be evaluated in the Draft EIS. Tier III involved comprehensive evaluation of environmental consequences to recommend a Preliminary Preferred Alternative in the Draft EIS.

Each successive screening used criteria based on the purpose and need statement (Section 1.2, Purpose and Need) and the goals and objectives (Section 1.3, Goals and Objectives) for the Project:

- Improve cross-river transportation of people and goods while accommodating standard commercial navigation channel width
- Avoid, minimize, and/or mitigate impacts to the natural, built and aesthetic environment
- Avoid, minimize, and/or mitigate impacts to recreation
- Avoid, minimize, and/or mitigate impacts to cultural and historic resources
- Remain financially feasible and support local economic development
- Maintain the integrity of the Interstate Highway System and National Highway System

As the screening process progressed, the amount of detailed information available to evaluate the alternatives increased and was used in evaluating the alternatives. Detailed screening documentation and screening matrices are presented in the Tier I and Tier II reports (RTC, WSDOT, and ODOT 2001; RTC, WSDOT, and ODOT 2002).

Crossing Corridors Screening

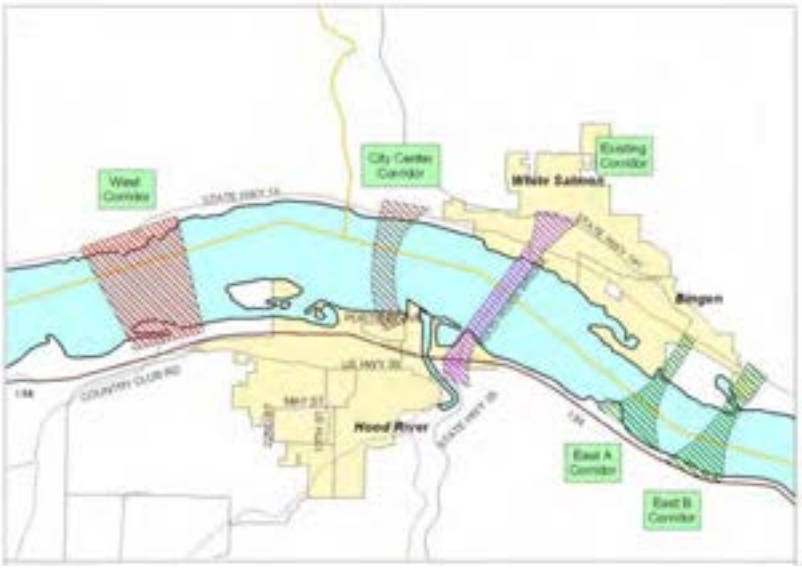
A corridor for the Project was defined as an area, up to 1,000 feet wide that connects I-84 or a proximate point in Oregon to SR 14 or a proximate point in Washington. Six crossing corridors were studied, including the existing corridor where the Hood River Bridge is located and five new crossing corridors identified from the public and agency involvement process.

The Tier I crossing corridors included (Exhibit 2-9):

- West Corridor—West Hood River Interchange to SR 14 near the Spring Creek Hatchery
- City Center Corridor—City Center Interchange to SR 14 between the White Salmon River and Dock Grade Road
- Existing Corridor (low)—parallel to the existing bridge crossing at a low elevation
- Existing Corridor (high)—parallel to the existing bridge crossing at a higher level (bluff to bluff)
- East A Corridor —Stanley Rock to Port of Klickitat
- East B Corridor—east of Stanley Rock to Port of Klickitat

[3] The use of the term 'tier' refers to the SR 35 Columbia River Crossing Feasibility Study (1999-2004) and its associated sequential study phases. Under NEPA, tiered environmental documents have a different connotation concerning the relationship between a program of improvements and the resulting projects. 'NEPA tiered documents' were not developed for the Project EIS.

Exhibit 2-9. Crossing Corridors Evaluated



Criteria used to evaluate the crossing corridors included improvement in traffic operations and bicycle and pedestrian travel; potential impacts to the environment, recreational activities, and cultural or historic properties; compliance with land use plans; and design feasibility. The results of the crossing corridor screening included:

- Advance the City Center, Existing-Low, and East A corridors.
- Dismiss the West Corridor, Existing-High Corridor, and East B Corridor

The basis for the dismissal of the three alternatives above is summarized in Section 2.4, Alternatives Considered but Dismissed. Additional details on the results of the screening and evaluation can be found in the Tier I report (RTC, WSDOT, and ODOT 2001).

Facility Type Screening

In Tier II of the Feasibility Study (RTC, WSDOT, and ODOT 2002), the three advanced corridors were evaluated across various facility types, such as a replacement bridge for all travel modes, a tunnel for vehicles paired with retrofitting the existing bridge for bicycle and pedestrian use, retrofitting the existing bridge for all modes. Using similar evaluation criteria, results of this screening were:

- Advance the Existing-Low Corridor with a replacement bridge for all modes since this corridor/facility combination would have the lowest impacts to transportation, environment, recreation; lowest cost.
- Dismiss the City Center Corridor, East A Corridor, the tunnel facility, and retrofitting the existing bridge.

The basis for the dismissal of the four alternatives above is summarized in Section 2.4, Alternatives Considered but Dismissed. Additional details on the results of the screening and evaluation can be found in the Tier II report (RTC, WSDOT, and ODOT 2002).

Alignment Alternatives for the Existing Corridor

The next effort in Tier II of the Feasibility Study identified three specific alignments within the Existing Corridor to locate a replacement bridge for all modes. These alignments were advanced for further study as the build alternatives in the Draft EIS, which resulted in the range of alternatives evaluated to include:

- No Action Alternative
- Existing Corridor 1 (EC-1): West connection to Dock Grade Road
- Existing Corridor 2 (EC-2): West alignment
- Existing Corridor 3 (EC-3): East alignment

Re-screening the Build Alternatives for the Supplemental Draft EIS

Design refinements to the three Draft EIS build alternatives occurred as part of the Bridge TS&L Study (2010-2011) and the current Supplemental Draft EIS. During the Bridge TS&L Study, a preferred bridge type was identified, and the structural design of a segmental concrete box girder bridge was advanced to determine the number of piers, pier location, foundation type, substructure, and bridge deck. As the next phase of work began in 2018 to support the Supplemental Draft EIS, the design of the roadway connections and bridge approaches were refined to consider three-dimensional conditions of the Oregon and Washington shorelines; existing roadways; geological, topographical, and environmental conditions; and other land-based developments.

Through these design refinements and new baseline information, design challenges were identified, and prior assumptions were re-tested; thus, the Port in partnership with ODOT and FHWA re-screened the three build alternatives evaluated in the Draft EIS to determine if each alternative would still be a feasible solution and meet the Project purpose and need statement. The outcome of this re-screening determined that Alternative EC-1 had critical design flaws that substantially reduced the likelihood of it being considered as a feasible solution; thus, Alternative EC-1 was dismissed from further consideration (detailed rationale for this decision is provided in Section 2.4, Alternatives Considered but Dismissed).

As a result of the re-screening, the range of alternatives evaluated in the Supplemental Draft EIS include:

- No Action Alternative
- Alternative EC-2: West alignment
- Alternative EC-3: East alignment

As described below, these three alternatives provide a reasonable range of alternatives for detailed analysis and are representative of the full spectrum of reasonable alternatives. The No Action Alternative is included as required by NEPA, and the two build alternatives utilize the facility type and corridor locations identified as reasonable during the screening process. As detailed in Section 2.4, Alternatives Considered but Dismissed, other alternatives (including different corridor locations and facility types) were dismissed as unreasonable for not meeting the purpose and need, or for being not prudent or practicable.

Consultation with the USCG was undertaken for preparing information on navigation clearances of the build alternatives. Supported by a Navigation Impact Report created for the Project, USCG issued a Preliminary Navigation Determination. A Section 9 bridge permit from USCG will be required for final design of the chosen alternative.

2.4. Alternatives Considered but Dismissed

Under 23 CFR § 40 CFR § 1502.14(a), an EIS must briefly discuss the reasons why other alternatives originally under consideration were dismissed. Alternatives can be dismissed from detailed study when they are not deemed reasonable, prudent, or practicable. The purpose and need statement serves as the basis for identifying whether an alternative is reasonable. An alternative can be dismissed when it does not satisfy the purpose and need statement of a proposed action or when the alternative is not reasonable (or prudent or practicable) in terms of environmental impacts or cost.

As discussed under Section 2.3, Alternatives Development and Screening, a wide range of alternatives were considered during the screening process, including both facility types and corridor locations. The following facility type alternatives were considered but ultimately dismissed.

- Aviation transport: This facility type was dismissed as it would not adequately accommodate trucks and automobiles; would not provide improvements to traffic operations, vehicle and freight safety, or river navigation; would not provide a cross-river bicycle and pedestrian crossing; and, would not be feasible for most residents. Therefore, the facility type would not meet the purpose and need.
- Bicycle/pedestrian only facility: This facility type was dismissed as it would not adequately accommodate trucks and automobiles; would not improve traffic operations, vehicle and freight safety, or river navigation. Therefore, the facility type would not meet the purpose and need.
- Ferry system: A ferry system would have significant impacts on navigation and water-based recreation. Moreover, this facility type would not provide improvements to traffic operations or vehicle and freight safety. Therefore, the facility type would not meet the purpose and need and would not be prudent.

- Tramway: This facility type was dismissed as it would not adequately accommodate trucks and automobiles, which would not meet the purpose and need. In addition, a tramway would not be visually subordinate, which is a requirement in the CRGNSA, and therefore this facility type would not be prudent.
- Transit only facility: This facility type was dismissed as it would not adequately accommodate trucks and automobiles, and would not provide improvements to traffic operations, vehicle and freight safety, river navigation, or seismic resiliency. Therefore, this facility type would not meet the purpose and need.

The screening criteria for corridor alternatives were based on the purpose and need statement (Section 1.2, Purpose and Need) and the goals and objectives (Section 1.3, Goals and Objectives). Therefore, any alternative determined to be in conflict with the screening criteria did not meet the Project's purpose and need or goals and was dismissed. Through the screening process, four alternatives were deemed reasonable and advanced to the Draft EIS for detailed study (Alternative EC-1, Preferred Alternative EC-2, Alternative EC-3, and the No Action Alternative).

The following seven alternatives were deemed unreasonable and were dismissed from detailed study:

- West Corridor (West Hood River Interchange to SR-14 near the Spring Creek Hatchery): The West Corridor alternative was dismissed during the crossing corridor screening (Tier I). The alternative was determined to cause conflicts with recreational use at the Spring Creek Hatchery site, which is used by sailboarders. The alternative was also found to have relatively higher impacts associated with historic resources, including the Columbia Gorge Hotel and the Historic Columbia River Highway, both on the NRHP. In addition, it rated poorly because of substantially out-of-direction travel to downtown Hood River; thus, would not improve traffic operations.
- Existing High Level Corridor (parallel to the existing bridge crossing at a higher level, i.e. bluff to bluff): This alternative was dismissed during the crossing corridor screening (Tier I) because it would have relatively high environmental impacts (especially visual impacts) and rated poorly in terms of transportation connections. Although connections from upper parts of the City of White Salmon would be convenient to a high-level bridge, connections for truck traffic, automobile traffic, and bike/pedestrian traffic from lower parts of the cities of White Salmon and Bingen would be poor. In addition, City of White Salmon areas near the approach would experience greater congestion and noise under this alternative.
- East B Corridor (east of Stanley Rock to Port of Bingen): This alternative was dismissed under the crossing corridor screening (Tier I) because a new interchange on I-84 would need to be constructed, which would require an exception to the Oregon Statewide Planning Goals; impacts to environmental resources, including wetlands adjacent to the Oregon touchdown location and sensitive wildlife species, such as peregrine falcon and their nesting habitat on cliffs near the Oregon touchdown location; and out-of-direction travel for vehicles, bicycles and pedestrians.
- East A Corridor (Stanley Rock to Port of Bingen): This alternative was dismissed under the facility type screening (Type II) due to similar reasons for dismissing the East B Corridor, in addition to encroachment on Koberg Beach State Recreation Site.
- City Center Corridor (City Center Interchange to SR-14 between the White Salmon River and Dock Grade): The City Center Corridor alternative was dismissed during the facility type screening (Tier II) as it was determined that the section of the Columbia River where the alternative would be located hosts a substantial amount of water-based recreation. In addition, the analysis determined the presence of severe geological constraints on the north bridge landing. Therefore, the alternative did not meet the purpose and need and was not practicable in terms of environmental impacts and engineering costs.
- Tunnel Facility: This alternative was dismissed under the facility type screening due to high costs and design feasibility. The analysis found that the design of a tunnel facility would result in a substantial increase in VMT and a high level of business displacement in Hood River. In addition, the alternative would require substantial excavation on steep slopes. Therefore, the alternative would not meet the purpose and need and was not prudent in terms of environmental impacts.
- Retrofitting the Existing Bridge: This alternative was dismissed under the facility type screening due to costs associated with seismic upgrades, retention of a narrow navigation opening, and dual bridge piers groups in-water that further complication navigation when a new replacement bridge is added while retaining the existing bridge. Therefore, the alternative would not meet the purpose and need, and was not practicable in terms of engineering costs.

Alternative EC-1 was included in the range of alternatives evaluated in the Draft EIS; however, through a re-screening of the Draft EIS build alternatives based on additional design and updated environmental technical analysis, Alternative EC-1 had critical design flaws and was no longer a viable solution. This updated evaluation led the joint lead agencies to dismiss this alternative from further consideration in the Supplemental Draft EIS. Key considerations in this dismissal include:

- For the bridge approach to have the required vertical clearance over the BNSF Railway, this segment of SR 14 would be required to be raised approximately 17 feet above its existing surface level. By comparison, Alternative EC-2 would need SR 14 to be raised approximately 2 feet and Alternative EC-3 would not require SR 14 to be raised to provide the bridge connection.
- Since SR 14 runs along the base of a steep cliff, there would be no feasible way to realign SR 14 to minimize the substantial grade differences that would result from this alternative.
- Construction associated with raising SR 14 to this degree would require a lengthy closure of SR 14, which would present substantial challenges, such as:
    - Access to properties along S. Dock Grade Road including the White Salmon TFAS
    - Safety of adjacent properties due to extensive groundwork and retaining wall construction
    - Detour routes that would have substantial out-of-direction travel for passenger vehicles and freight trucks
    - Severe impact on emergency provider response times that would typically use this section of SR 14
    - Blockage to vehicles detouring between SR 14 and I-84 during inclement weather or other emergency conditions (e.g., wildfires, landslides, train derailments).
- Substantially more property acquisition required and higher right-of-way and construction costs compared to Alternative EC-2 and Alternative EC-3.

2.5. Identification of Preferred Alternative

The Preferred Alternative is the course of action that the lead agencies have determined to be most desirable in terms of balancing functional efficiency and environmental, social, and economic effects. This identification of a Preferred Alternative is subject to revision.

Alternative EC-2 was identified as the Preliminary Preferred Alternative for the Draft EIS and reconfirmed as the Preferred Alternative for the Supplemental Draft EIS based on public input and a re-screening of the build alternatives. Alternative EC-2 was selected as the Preferred Alternative as it best meets the Project's Goals and Objectives (Section 1.3, Goals and Objectives), such as improving cross-river multi-modal transportation, maintaining the integrity of the interstate highway system, and avoiding and minimizing impacts to the community, natural environment, and archaeological resources (WSP 2020).

The final evaluation and identification of a Selected Alternative will be based on public input, comments on the Draft EIS and Supplemental Draft EIS, and any other pertinent information that may become available. Comments and information that would assist in such an evaluation are specifically invited during the Supplemental Draft EIS 45-day public comment period.

2.6. Status of the Short-term and Mid-term Improvements Identified in the Draft EIS

Short-term (within 5 years of the Draft EIS) and mid-term (6 years to 10 years after the Draft EIS) improvements were recommended as interim projects if the replacement bridge Project was not implemented within 10 years after the Draft EIS was published. Between 2003 and today, some of these improvements have been implemented as separate projects. The status of these improvements is described in Exhibit 2-10 and Exhibit 2-11.

Exhibit 2-10. Update on Prior Short-term Improvement Recommendations

Improvement	Status
Replace existing steel grating with new steel grating that is quieter	Re-decking of the bridge was completed in 2005
Install roundabout or traffic signal at the I-84 eastbound ramps and OR 35/Hood River Bridge approach road	Roundabout was studied, but not recommended
Convert the tollbooth to one-way tolls southbound	Not completed; electronic tolling was implemented instead
Establish a bridge replacement fund through increased tolls	Tolls have been increased over time to support maintenance of the existing bridge and a bridge replacement fund

Exhibit 2-11. Update on Prior Mid-term Improvement Recommendations

Improvement	Status
Signalize the I-84 westbound ramps at the Hood River Bridge approach road or convert to a roundabout	Intersection at the westbound ramps were signalized
Convert the four-way stop at E. Marina Way and Hood River Bridge approach road to a roundabout or traffic signal; due to the proximity of this intersection with the I-84 westbound ramp intersection, these two intersections may be combined into a composite roundabout	Intersection of Button Bridge Road (approach road to the bridge) and E. Marina Way was signalized
Restrict or close the private driveway onto the Hood River Bridge approach road	Not completed; access remains a right-in-only driveway
Replace the tollbooth and establishing an automated toll collection system	Toll plaza was improved, and an electronic tolling option was implemented
Signalize SR 14 at the Hood River Bridge approach road	Intersection at SR 14 was signalized

2.7. Additional Compliance Processes Underway and Unavailable Information

There are several environmental compliance processes that are underway at the time the Supplemental Draft EIS is published. These processes are listed below and will be completed prior to publishing the combined Final EIS and ROD:

- Obtain a biological opinion from NOAA Fisheries to complete ESA Section 7 consultation
- Obtain a concurrence letter from USFWS to complete ESA Section 7 consultation
- Complete compliance with the NHPA Section 106 process, including additional fieldwork for testing and evaluation; evaluation of any TCPs identified through ethnographic studies conducted by three tribes; the Oregon SHPO and Washington State DAHP concurrence on potentially eligible historic properties determinations of eligibility, findings of effect, and Historic Resources Technical Report and Cultural Resources Assessment; and, a signed Memorandum of Agreement or Programmatic Agreement to resolve adverse effects to the Hood River Bridge and other historic properties recommended as eligible and having adverse effects by the Project
- Finalize all Section 4(f) documentation with correspondence from the officials with jurisdiction and approval by FHWA
- Continue tribal consultation to identify impacts and mitigation for cultural resources and treaty fishing rights.

Information that is unavailable for consideration in the environmental impacts analysis includes the following:

- Potential archaeological resources buried below 15 feet to 20 feet of fill on the Oregon shoreline and submerged within the Columbia River. Efforts are ongoing to research different techniques and their efficacy to identify submerged resources. If significant archaeological resources, including but not limited to Native American artifacts, sites, TCPs, or human remains, are present in these areas, the Project is likely unable to evaluate the significance of the resources, make a finding of effect, or propose mitigation before the combined Final EIS/ROD is published. Based on ethnographic studies conducted for the Project and a comprehensive literature review, it is reasonably foreseeable that archaeological resources are present within and under the riverbed as well as along the Oregon shoreline. Surveys were not completed during the EIS process in these areas due to substantial cost associated with this work.
- The Project's consistency with the CRGNSA Management Plan could not be established. The CRGNSA Management Plan (2016) specifies goals and guidelines for a Columbia River bridge replacement undertaking within the CRGNSA; however, specific criteria to evaluate a permit application to replace a bridge over the Columbia River has not been established by the CRGC or USFS. No schedule to update the CRGNSA Management Plan has been set to develop these specific criteria. Note: the CRGC adopted a revised CRGNSA Management Plan in October of 2020 but due to timing this Draft Supplemental EIS does not reflect the updated plan.
- A park boundary determination in compliance with Section 6(f) of the LWCF for the Port's Marina Park and Basin and Waterfront Trail could not be conducted until the design advances to a higher level. The assumed park boundary illustrated in the Supplemental Draft EIS is based on 1970s LWCF grant documents that were awarded for improvements to this site. Thus, impacts to the Section 6(f) resources were disclosed in the Supplemental Draft EIS to the extent possible. Specific determinations of Section 6(f) park land converted to a transportation use cannot be determined until the Project design is advanced and a park boundary determination is completed.

2.8. Permits and Approvals

Exhibit 2-12 lists the anticipated federal, state, and local permits, clearances, and approvals that are anticipated to be required to construct the Project.

Exhibit 2-12. List of Anticipated Permits and Approvals

Permit or Approval	Required	Comments
401 Water Quality Certification	Yes	Required based on 404 permit; certification required for both Washington and Oregon
Access Connection Permit – WSDOT	Yes	Required for temporary and permanent vehicular access connections with state highways under the jurisdiction of WSDOT
Aquatic Use Authorization	Yes	Washington State Department of Natural Resources manages state owned aquatic lands.
Archaeology clearance	Yes	Compliance with Section 106 of the NHPA; approvals by the Oregon SHPO and/or Washington State DAHP
Building and trade permits	Yes	Not required for bridge structure but may be needed for accessory structures (walls, etc.)
Construction Stormwater Permit Coverage	Yes	1200-C in Oregon and Washington Construction Stormwater General Permit
CRGNSA Consistency Review	Yes	Required for elements located outside of the cities of White Salmon and Hood River
ESA	Yes	Section 7 consultation with NOAA Fisheries and USFWS
Floodplain permits	Yes	City of Hood River, City of White Salmon, and Hood River County
General permit - WSDOT	To be determined	May be required depending on owner/operator of bridge
Hydraulic Project Approval	Yes	Required for activities within the Columbia River in Washington

Permit or Approval	Required	Comments
Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) Clearance	Yes	Consultation with NOAA Fisheries
Noise variance	To be determined	May be required for construction noise that exceeds thresholds or occurs outside of established construction hours
Oregon Fish Passage Act Approval	Yes	Required for in-water structure design
Oregon DSL Removal-Fill Permit	Yes	Required for fill and structure placement in the Columbia River
Rail crossing	Yes	From BNSF Railway for overcrossing in Washington
Section 4(f) review	Yes	Review required for impacts to Section 4(f) properties to determine if impacts are a temporary occupancy, *de minimis* impact, or require evaluation and approval from FHWA
Section 6(f) review	Yes	Review required by the National Park Service (NPS) to determine the likelihood of a Section 6(f) temporary non-conforming use for construction activities and right-of-way conversion of the Hood River Marina Park and Basin property, as well as impacts to the Waterfront Trail in the park. A boundary determination for this park is needed to determine the extent of Section 6(f) impacts
Shoreline Substantial Development and Conditional Use Permit	Yes	For construction within and adjacent to the Columbia River in the City of White Salmon
Site Plan Review	Yes	City of Hood River
USACE Section 404 Permit	Yes	Section 404 permit required for discharge of fill within Columbia River or other wetlands
USACE Section 408 Permit	Yes	Required based on potential effects on federal navigation channel
USCG Section 9 Bridge Permit	Yes	Navigation Impact Report (2020) supported a Preliminary Navigation Determination issued by the USCG; a bridge permit would need to be obtained during final design
Washington SEPA	To be determined	Required if a Washington State action is needed
Waterway lease	To be determined	May be required for use of Oregon state managed aquatic lands

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3. AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION

Chapter 3 looks at the beneficial and adverse impacts of the Project on transportation operations, environmental resources, and the community. Each section begins with a description of the existing conditions for a specific resource and then compares how the resource would be positively or negatively affected by the No Action Alternative, the Preferred Alternative EC-2, and Alternative EC-3. The study area for each resource is illustrated in the respective appendices. Mitigation measures to avoid, minimize, or mitigate adverse impacts that could result from the build alternatives are also identified for each resource.

3.1. TRAFFIC OPERATIONS

The Hood River Bridge provides an essential interstate connection between Oregon and Washington. The existing bridge connects White Salmon, Washington, and Hood River, Oregon, and was used by over 4.5 million vehicles in a 1-year period spanning July 2017 to June 2018. A substantial majority of the total vehicles crossing the Hood River Bridge per year are passenger automobiles or light-duty pickups. These vehicles make up over 97 percent total vehicles on the bridge, while larger vehicles (trucks and other heavy vehicles) make up approximately 2 percent to 3 percent of total traffic.

Large vehicles crossing the existing bridge are advised to turn in mirrors due to narrow lanes.

Traffic analysis for the Project included eight study intersections (Exhibit 3-1) and examined for two peak hours when traffic volumes were highest during the morning (7:30 am to 8:30 am) and afternoon (4:00 pm to 5:00 pm).

Exhibit 3-1. Study Intersections and Roadways

Existing Conditions

Current vehicle congestion levels and delays on the Hood River Bridge are moderate and deemed manageable during peak demand conditions. Overall, the existing conditions (2018) traffic analysis indicated that congestion on the bridge and at local intersections is more prevalent during the pm peak hour than the am peak hour (Exhibit 3-2). All study intersections operate within identified mobility standards under existing conditions. However, substantial congestion (over 60 seconds of average delay) can be experienced by vehicles in the pm peak hour when making westbound left turns and northbound left turns at the SR 14/Hood River Bridge signalized intersection. In addition, SR 14 exceeds the WSDOT mobility standard for the segment west of the Hood River Bridge.

The Hood River Bridge provides the only direct transportation connection between the cities of Hood River, Oregon, and White Salmon and Bingen, Washington. This single connection is an integral link between these cities, as well as the counties of Hood River, Klickitat, and Skamania (eastern portion), which enables this cross-river region to function interdependently. Freight destined to and originating from businesses on the Washington side of the river is often transported across the Hood River Bridge because of the faster and more efficient travel on I-84 located on the Oregon side of the river compared to SR 14, a two-lane Washington state highway with slower speeds due to tighter curves and multiple tunnels with height restrictions. Even if the origin and destination of the goods are both in Washington or other points north, crossing the Hood River Bridge, traveling 55 miles west on I-84, and connecting to I-205 in Portland to travel back to Washington typically reduces travel time and cost for freight shipments. The existing bridge, thus, provides economic value for the businesses and industries in the Washington portion of the Mid-Columbia region through its vital connection to the interstate highway system (i.e., I-84, I-205, I-5, and I-82).

Project Impacts and Benefits

No Action Alternative (2045)

The No Action Alternative (2045) reflects baseline conditions against which potential improvements are compared to assess impacts of the replacement bridge. The No Action Alternative would continue current tolling conditions with the exception that tolling is expected to be fully automated and electronic in the future. Technological advances are expected to make cash operations (via toll booth) obsolete so that all vehicle tolls would be collected electronically by 2045. This would remove the need for the toll booth to be operating on the south end of the bridge, and thus, eliminate any vehicle queues that sometimes occur at the toll booth when bridge demand is highest.

Based on historical use of the Hood River Bridge, forecasted traffic volumes are expected to grow up to 2 percent per year. This growth translates to an estimated 54 percent increase in traffic volumes by 2045 compared to existing (2018) traffic volumes, or the approximate equivalent of 90,000 additional vehicles using the bridge each year.

Compared to existing conditions, congestion at several intersections in the area of potential impacts (API) would substantially worsen with the No Action Alternative both in the am and pm peak hour as shown in Exhibit 3-3.

Exhibit 3-2. Peak Hour Traffic Delay for Existing Conditions (2018)

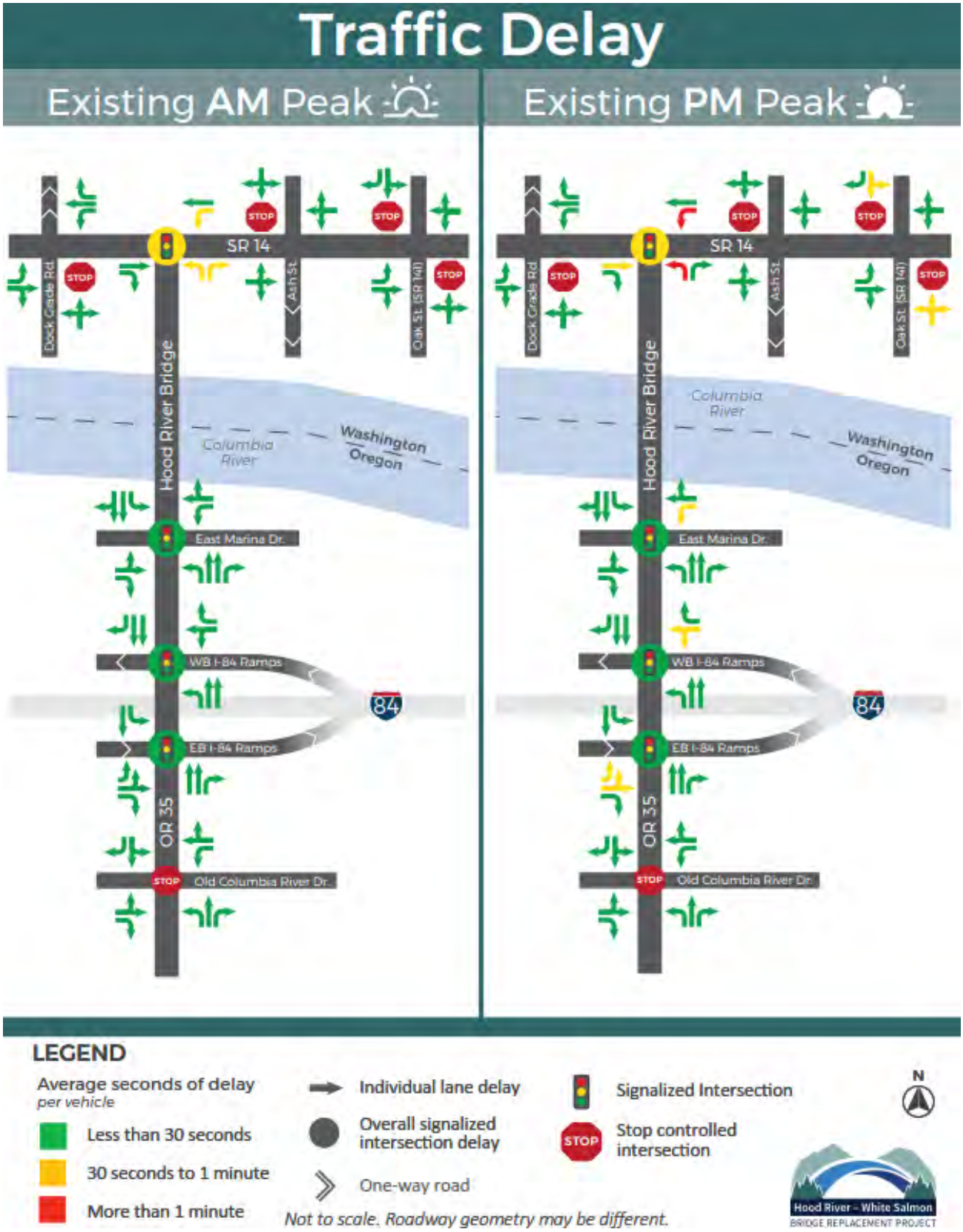


Exhibit 3-3. Average Delay per Vehicle for the Existing Conditions (2018) and No Action Alternative (2045)

	Existing Conditions (2018)		No Action Alternative (2045) Compared to Existing Conditions	
Study Intersection	AM peak hour 7:30 am - 8:30 am	PM peak hour 4:00 pm - 5:00 pm	AM peak hour 7:30 am - 8:30 am	PM peak hour 4:00 pm - 5:00 pm
SR 14 and Dock Grade Road*	17 seconds	24 seconds	22 seconds	62 seconds *158% more*
SR 14 and Hood River Bridge (SR 35)	37 seconds	47 seconds	65 seconds *110% more*	144 seconds *206% more*
SR 14 and Oak Street (SR 141)*	21 seconds	49 seconds	>200 seconds *>300% more*	>200 seconds *>300% more*
SR 14 and Ash Street*	14 seconds	17 seconds	25 seconds *79% more*	44 seconds *159% more*
Button Bridge Road and E. Marina Way	13 seconds	14 seconds	26 seconds *100% more*	20 seconds *43% more*
Button Bridge Road and Westbound I-84 Ramps	5 seconds	5 seconds	7 seconds	6 seconds
US 30 and Eastbound I-84 Ramps	15 seconds	20 seconds	18 seconds	23 seconds
Mt. Hood Hwy (US 30), OR 35, and Old Columbia River Drive (Old US 30)*	19 seconds	29 seconds	51 seconds *168% more*	162 seconds *>300% more*

Note: Percent change shown where change in average delay is more than 5 seconds.
* Indicates unsignalized intersections. Average delay reported for worst movements.

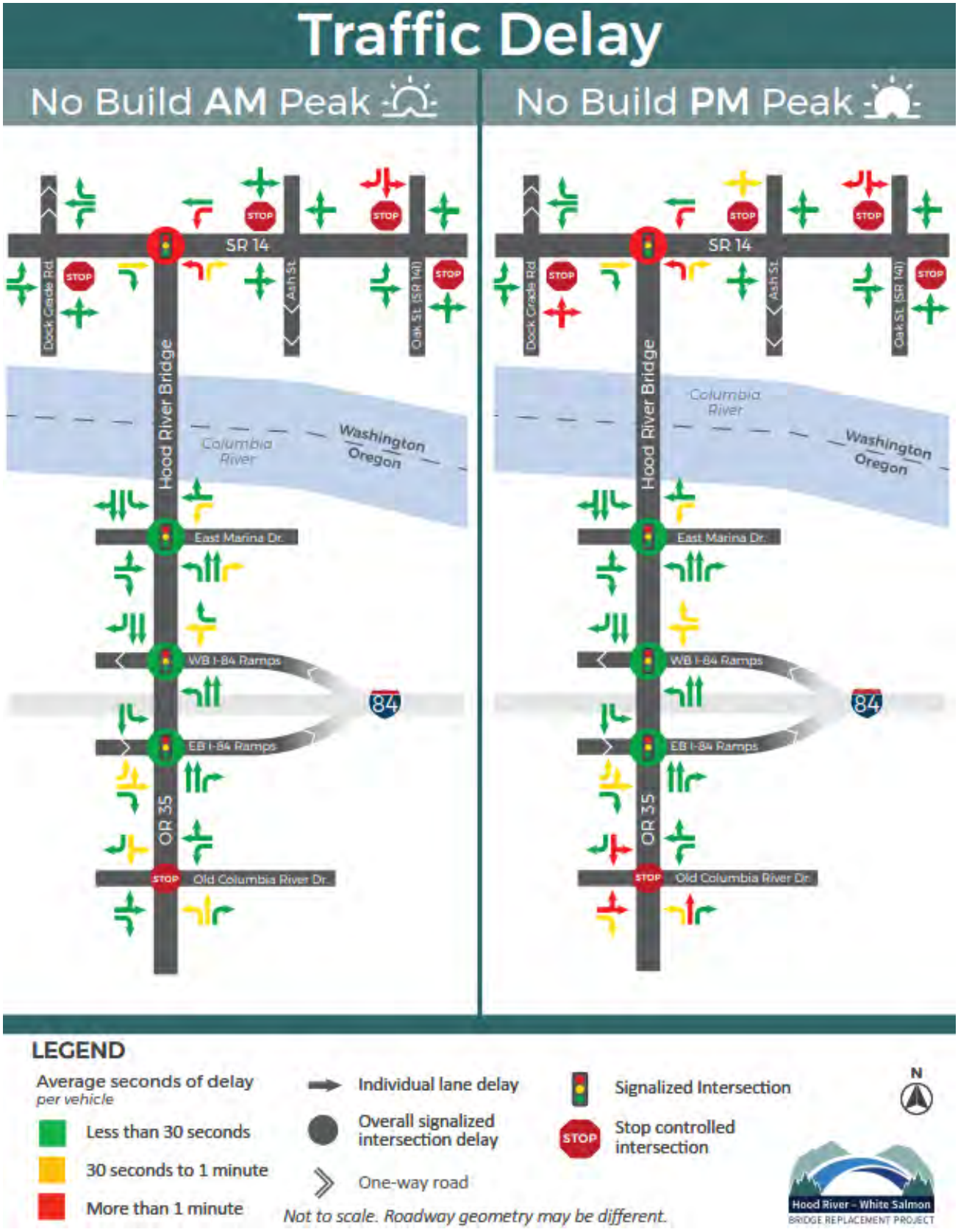
The following issues were identified based on the No Action Alternative (2045) traffic analysis results (Exhibit 3-4):

- Vehicles turning onto SR 14 from Oak Street (two-way stop) in downtown Bingen would experience severe delay of over 200 seconds on average during the am and pm peak hours.
- The SR 14/Hood River Bridge intersection (traffic signal) would see an increase in volume such that vehicle demand would exceed the available capacity during the am and pm peak hours. Thus, the average delay would increase to over 140 seconds per vehicle during the pm peak hour.
- US 30/OR 35/Button Bridge Road/Old Columbia River Drive (referred to as Button Junction [all-way stop]) would see an increase in volume such that vehicle demand would exceed the available capacity during the pm peak hour. As a result, the ODOT volume to capacity ratio mobility standard would be exceeded, and the average delay would increase to over 160 seconds per vehicle.[4]
- SR 14 would exceed the WSDOT mobility standard for highway segments near the Hood River Bridge.

The No Action Alternative would continue to provide a cross-river connection between Oregon and Washington until such a time in the future that the existing bridge would exceed its operational life or a catastrophic event occurs and the bridge would close. Congestion would continue to worsen with increases in average delay at several API intersections. When the bridge would close in the future, the No Action Alternative would result in indirect impacts of reduced transportation connectivity, increased travel times for those crossing the river, and increased traffic volumes on the Bridge of the Gods and The Dalles Bridge.

[4] This deficiency was previously identified in the City of Hood River Transportation System Plan (TSP) (DKS et al 2011) and the Interstate 84 Exit 63 & 64 Interchange Area Management Plan (DKS et al 2011).

Exhibit 3-4. Peak Hour Traffic Delay for No Action Alternative (2045)



Build Alternatives (2045)

Construction of the build alternatives would result in short-term impacts to traffic including lane reductions, lane closures, and traffic detours, which would likely increase delay and reduce travel time reliability for all vehicular traffic (passenger, truck, and emergency service). Some vehicles could divert from their normal travel patterns and the possibility of conflicts with people walking or on bikes could increase. The existing bridge would remain in operation until the replacement bridge is open to traffic so that cross-river connectivity would be preserved during construction.

The replacement bridge would result in long-term direct benefits by providing wider lanes and a shoulder in each direction for motor vehicles. Drivers could feel more comfortable using the bridge. Existing heavy vehicle restrictions would be eliminated, and vehicle speeds would increase with the higher speed limit. Travel time reliability would improve as disabled vehicles would not block the roadway due to the availability of roadway shoulders on the replacement bridge.

The design of the existing bridge (No Action Alternative) and replacement bridge (build alternatives) each have two lanes for motor vehicles; therefore, the replacement bridge would not substantially increase motor vehicle capacity. However, this analysis assumes an additional increase in bridge crossing volume of approximately 2 percent of future demand, or 40 additional peak hour vehicles, for both build alternatives (2045) in both am and pm peak hours. The increase is intended to reflect the expected improvement in driver comfort due to wider lanes and shoulders and the elimination of existing restrictions (based on size or weight) for very large trucks.

The average delay results for API intersections under both build alternatives (2045) would closely match the No Action Alternative (2045) at all API intersections except for the reconstructed SR 14/Hood River Bridge intersection, as shown in Exhibit 3-5 and Exhibit 3-6. The build alternatives assume the SR 14/Hood River Bridge intersection would be reconstructed as a roundabout. This intersection design would substantially reduce congestion during am and pm peak hours compared to the No Action Alternative resulting in a reduction of approximately 80 percent to 90 percent less average vehicle delay and substantial reductions in congestion for trips crossing the bridge.

Due to the minor increase in the traffic volumes between the No Action Alternative and the build alternatives, the average vehicle delay at most other API intersections would be slightly higher in the build alternatives compared to the No Action Alternative; these differences are not expected to be substantial (5 seconds or less of change in average delay).

Exhibit 3-5. Average Delay per Vehicle, Build Alternatives Compared to the No Action Alternative

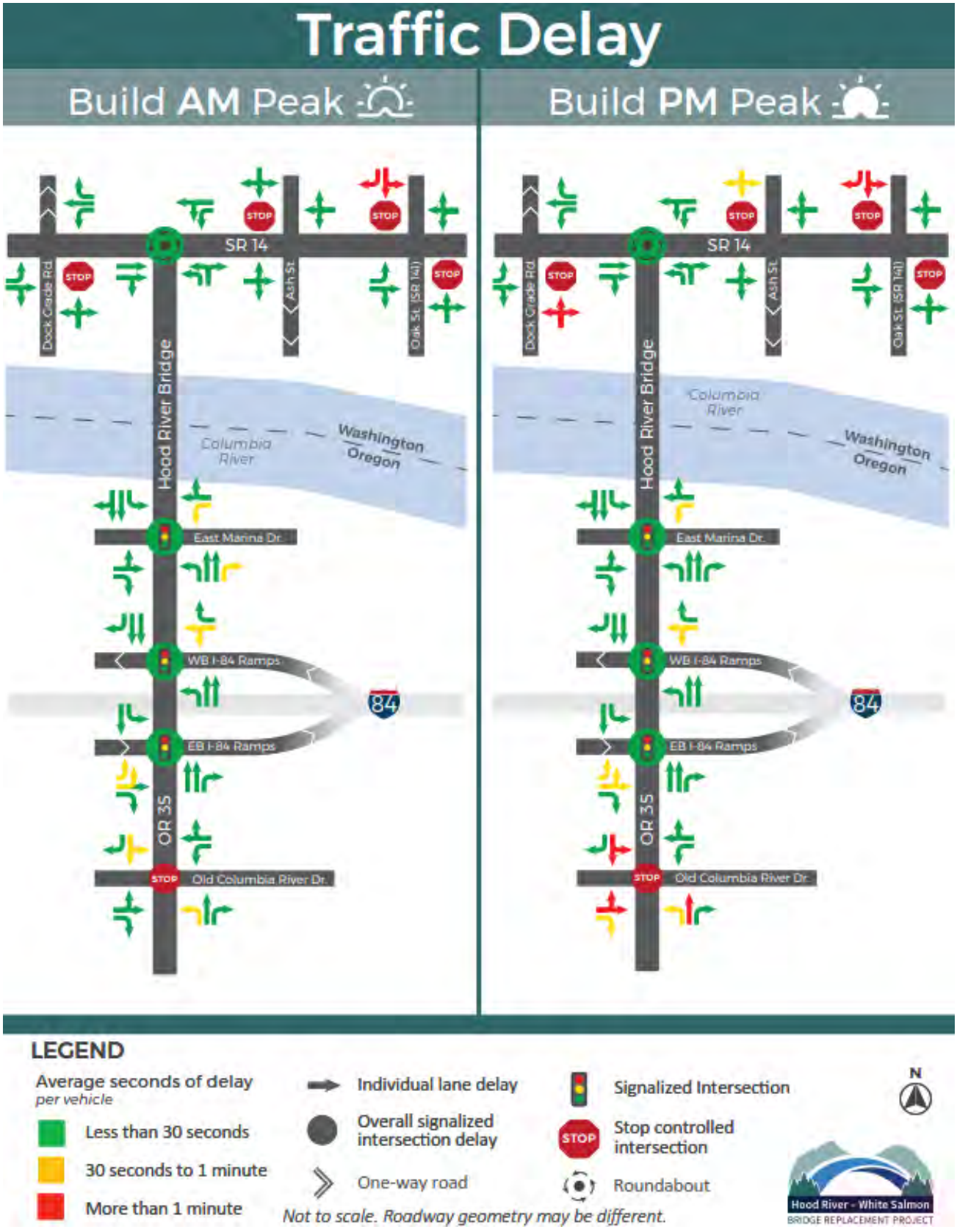
	No Action Alternative (2045)		Preferred Alternative EC-2 and Alternative EC-3 (2045) Compared to No Action Alternative	
Study Intersection	AM peak hour 7:30 am–8:30 am	PM peak hour 4:00 pm–5:00 pm	AM peak hour 7:30 am–8:30 am	PM peak hour 4:00 pm–5:00 pm
SR 14 and Dock Grade Road*	22 seconds	62 seconds	23 seconds	64 seconds
SR 14 and Hood River Bridge (SR 35)	65 seconds	144 seconds	12 seconds [o] *82% less*	19 seconds [o] *87% less*
SR 14 and Oak Street (SR 141)*	>200 seconds	>200 seconds	>200 seconds	>200 seconds
SR 14 and Ash St*	25 seconds	44 seconds	26 seconds	47 seconds
Button Bridge Road and E. Marina Way	26 seconds	20 seconds	21 seconds	20 seconds
Button Bridge Road and Westbound I-84 Ramps	7 seconds	6 seconds	7 seconds	6 seconds
US 30 and Eastbound I-84 Ramps	18 seconds	23 seconds	18 seconds	24 seconds
Mt. Hood Hwy (US 30), OR 35, and Old Columbia River Drive (Old US 30)*	51 seconds	162 seconds	51 seconds	162 seconds

Percent change shown where difference in average delay is more than 5 seconds.

* Indicates unsignalized intersections. Average delay reported for worst movements.

[o] Indicates the intersection is analyzed as a roundabout in the future build scenario. Average delay reported for worst movements.

Exhibit 3-6. Peak Hour Traffic Delay for the Preferred Alternative EC-2 and Alternative EC-3 (2045)



Under both build alternatives, the construction of a roundabout at the SR 14/Hood River Bridge intersection would resolve the congestion anticipated at this intersection. The other mobility issues identified in previous studies and the No Action Alternative (2045) would remain under both build alternatives (2045):

- Vehicles turning onto SR 14 from Oak Street (two-way stop), and the nearby turning movements at SR 14 and Maple Street (two-way stop), in downtown Bingen would experience severe delay during the am and pm peak hours.
- US 30/OR 35/Button Bridge Road/Old Columbia River Drive (all-way stop) would experience traffic volumes that exceed the available capacity during the pm peak hour.
- SR 14 would exceed the WSDOT mobility standard for segments near the Hood River Bridge. Although the roundabout located at the intersection of SR 14/Hood River Bridge would resolve the key traffic issue on the corridor, the segment analysis methodology is not sensitive to intersection design.
- No substantial impacts to traffic operations on SR 14 intersections in the City of Bingen were identified as a result of the Project.

Over time, construction of a wider, safer replacement bridge could result in the indirect impact of attracting additional vehicular traffic that was previously diverting to other bridges due to driver discomfort, heavy vehicle restrictions, delays to bridge lifts, or other reasons.

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to traffic operations:

- Minimize, to the extent practical, the movement of construction equipment and vehicles on the bridge during peak commute periods.
- Provide temporary access alternatives when existing access facilities are closed or otherwise are unusable.
- Coordinate with transportation officials of local jurisdictions to develop a detailed traffic management plan as well as work zone traffic control plans that provide a framework for detours, lane closures, staging plans, etc.
- Develop a public outreach program to include periodic media broadcasts, a newsletter, and Project website to inform residents and businesses in and around the Project area of changes in vehicle, freight, pedestrian, bicycle, or transit routes during construction.
- Maintain access to the existing Hood River Bridge throughout construction for all hours of the day except short-term closures as needed.
- Maintain access to the White Salmon TFAS.

Long-Term Impacts

No long-term mitigation measures related to traffic operations were identified.

Additional details of the traffic analysis and results are provided in the Transportation Technical Report (Appendix N).

3.2. Safety: Vehicle Travel, Emergency Response, River Navigation, and Seismic Resiliency

Existing Conditions

Crash History

The assessment of safety conditions on API roadways is based on the most recent available historical crash data from ODOT and WSDOT. Between 2013 and 2017, 11 crashes occurred at the four API intersections in Washington, with 36 percent injury-related and 64 percent involving property-damage only. Eight of these 11 crashes occurred at the SR 14/Hood River Bridge intersection. Most of these were rear-end crashes on SR 14, most likely due to driver inattention and/or following too closely.

Narrow lanes and the steel grated bridge deck create uncomfortable driving conditions.

Between 2012 and 2016, 39 crashes occurred near the four API intersections in Oregon, with 51 percent injury-related and 49 percent involving property-damage only. Fourteen (14) of the 39 crashes occurred at the Button Bridge Road/E. Marina Way intersection, with the majority being either rear-end or turning crashes.

All API intersections had reported crash rates well below 1.0 per million entering vehicles – a threshold typically indicating the need for further evaluation. There were no crashes involving fatalities in the API in the past 5 years of available data.

Vehicle Travel Safety Concerns

Safety concerns felt by drivers are not fully captured by the crash data. Members of the public have reported driver anxiety on the Hood River Bridge due to narrow lanes and steel grating and discomfort with traveling near oncoming vehicles, especially larger trucks, buses, trailers, and recreational vehicles. Vehicle damage such as scratches or side mirror contact may not be captured in the historical crash data.

Emergency Response

Law enforcement agencies in the area, as well as emergency service providers, can be potentially impacted by existing conditions on the bridge. Because there are no shoulders available on the existing bridge, drivers cannot pull over to allow emergency response vehicles to pass.

River Navigation Safety Concerns

The existing bridge has a horizontal navigation clearance of 246 feet, which is less than the U.S. Congressionally authorized 300-foot wide navigation channel, and creates difficulties for vessel navigation due to the narrowness of the opening. Barges using the Columbia River navigation channel typically measure 42 feet wide with doublewides at 84 feet. While barge lengths vary between 150 feet and 300 feet, lock sizes limit tow configurations (tugboat and its connected barges) to a total length of 650 feet. The substandard horizontal clearance for navigation under the current bridge has contributed to minor vessel contact to severe allision with the bridge; and, reports of near misses with the bridge are prevalent among river vessel pilots. The existing bridge has a vertical clearance of 57 feet in the closed position and 146 feet when the bridge is in the fully raised position. The lift span safely accommodates all vessels that have requested passage under the bridge.

Seismic Resiliency

The existing bridge is not seismically stable and is, thus, vulnerable to a seismic event.

Project Impacts and Benefits

No Action Alternative

Direct impacts of the No Action Alternative would likely include vehicle crashes in the API continuing to occur and even increasing in number as traffic volumes increase over time, although many of the crashes would likely be property-only damage as identified in Exhibit 3-7. Under this alternative, emergency response vehicles would experience slower response times through the API as congestion increases. The lack of roadway shoulder on the bridge would result in disabled vehicles blocking traffic flow and impacting emergency response time. For river navigation, the horizontal clearance of the bridge would remain substandard, contributing to vessel contacts and allisions with the bridge. At such a time in the future that the bridge would exceed its operational life or a catastrophic event occurs and the bridge is closed, the No Action Alternative would result in indirect impacts of requiring lengthy detours for emergency response vehicles to cross the Columbia River, which could be particularly problematic when emergency responders need to assist on the opposite side of the bridge.

Build Alternatives

Construction of either of the build alternatives could result in short-term impacts to emergency response as a result of travel time delays and reduced travel reliability when lanes are closed and/or detours are required. Further, drivers taking routes that they are not familiar with could result in additional crashes or other safety concerns.

Both build alternatives would be anticipated to result in long-term direct improvements to overall vehicle safety, emergency response, river navigation, and seismic resiliency (Exhibit 3-7). Driver comfort would be expected to improve, and instances of unreported close-calls or property-damage-only incidents could be reduced as a result of providing standard lane widths and shoulders.

Both build alternatives would widen the bridge horizontal navigation clearance that exceeds the navigation channel width and provide additional space for ships and barges to safely tack in windy conditions. The replacement bridge would be a fixed span bridge with a maximum 90-foot vertical clearance. This height would provide safe passage for current and known future vessels, although some vessels would need to lower masts prior passing under the bridge. Supported by the Navigation Impact Report created for the Project, USCG issued a Preliminary Navigation Determination. In addition, the replacement bridge would meet current design standards to be seismically sound under a 1,000-year seismic event and operational under a Cascadia Subduction Zone earthquake.

It would be anticipated that wider lanes and shoulders that would be available with the replacement bridge would allow vehicles to pull over on the bridge and make way for emergency response vehicles, resulting in improved response times for emergency vehicles. Further, if a vehicle would become disabled on the bridge, it could be moved to the shoulder to avoid blocking traffic and make it safer for all other vehicles to pass.

Improved travel time reliability through the API could result in indirect benefits including improved travel time for freight and other commercial vehicles and reduced commute time for workers.

Exhibit 3-7. Summary of Impacts and Benefits to Roadway Safety and Emergency Response

	No Action Alternative Compared to Existing Conditions	Preferred Alternative EC-2 and Alternative EC-3 Compared to No Action Alternative
Roadway Safety	• Likely increase in vehicle crashes due to higher volumes • Continued potential for property-damage-only incidents	• Improved driver comfort • Potential reduction in property-damage-only incidents • Separated pedestrian and bicycle facilities
Emergency Response for Critical Routes	• Slower response times due to increases in congestion	• Improved response times
Bicycle and Pedestrian Safety	• People walking or riding bicycles have no permitted access	• People walking or riding bicycles are separated from conflicts with vehicle traffic
River Navigation Safety	• Continued substandard horizontal clearance contributing to vessel contacts and allisions with the bridge	• Increases river navigation safety by providing horizontal clearances that meet current river navigation standards
Seismic Resilience	• Vulnerable to a seismic event	• Meets current seismic standards

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

For construction impacts to safety or emergency response, please see the proposed mitigation measures in Section 3.1, Traffic Operations.

Long-Term Impacts

No long-term mitigation measures related to vehicle travel safety or emergency response were identified.

Additional detail on roadway safety, emergency response, river navigation, and seismic resiliency is provided in the Transportation Technical Report (Appendix N).

3.3. Pedestrian, Bicycle, and Regional Transit Access

Existing Conditions

CAT and MATS provide public transit in Hood River and Klickitat counties.

Pedestrian, bicycle, and transit options in the API provide various connectivity to jobs, services, and other community resources. Pedestrian and bicycle use is currently prohibited on the existing Hood River Bridge; however, limited sidewalk and bicycle facilities are located on some roadways in the API.

Bicycle lanes are present on both sides of Button Bridge Road for approximately 600 feet between the eastbound I-84 ramps and E. Marina Way. No bicycle lanes are striped on nearby roadways in Washington. People on bikes could share lanes with vehicles on other roadways or use shoulders where available.

People riding bikes and walking use the Waterfront Trail on the Oregon side of the bridge. The trail includes a bicycle and pedestrian bridge across Hood River that connects to the Hood River Waterfront Park (via Nichols Parkway) and downtown Hood River (via Slough Trail and N. 2nd Street) to the west. A sidewalk along E. Port Marina Drive provides a pedestrian connection from Button Bridge Road sidewalks to the Waterfront Trail, and shared lane markings ("sharrows") provide a bicycle connection to the trail via E. Port Marina Drive, west of the Button Bridge Road/E. Marina Way intersection.

There are no sidewalks on the existing bridge approaches between SR 14 in Washington and E. Marina Way in Oregon. The SR 14 intersection at the Hood River Bridge includes a traffic signal with a marked crosswalk on the south side. There are curb-tight sidewalks on the south side of SR 14 for approximately 1.1 miles from Dock Grade Road eastward to the City of Bingen (about 0.3 mile west of Walnut Street). There are no sidewalks on N. Dock Grade Road, which provides a connection to the City of White Salmon, although the steep grade may limit access for some people.

Sidewalks have been constructed on each corner of the E. Marina Way intersection to serve marked crosswalks on each approach. South of E. Marina Way, sidewalks along Button Bridge Road are present on the east side only through the I-84 interchange and over the Union Pacific railroad tracks. The sidewalk terminates north of the intersection of Mt. Hood Highway (US 30), OR 35, and Old Columbia Drive.

Columbia Area Transit (CAT) and MATS are the public transportation providers in Hood River County and Klickitat County, respectively. CAT operates local and intercity bus routes and dial-a-ride service in Hood River County, but none of the fixed routes cross the Columbia River. MATS operates an intercity bus routes connecting the cities of White Salmon, Bingen, and Hood River. This route stops in the API at the Port. MATS fixed route service currently operates 10 times per day Monday through Friday with vehicles that provide bicycle racks. MATS also operates dial-a-ride service and a paratransit service line in the API.

Project Impacts and Benefits

No Action Alternative

The No Action Alternative would not result in any long-term, direct benefits or impacts on pedestrians and bicycles. This alternative assumes the existing bridge configuration would be maintained, including no permitted access for people walking or riding bicycles. No additional pedestrian or bicycle needs or improvements are assumed in the API beyond those identified in the 2011 Hood River Transportation System Plan (TSP). The TSP identifies sidewalk infill would occur on OR 35 as part of the previously identified improvements at the intersection of Mt. Hood Highway (US 30), OR 35, and Old Columbia River Drive (Old US 30). The TSP also identifies a proposed path crossing under I-84 connecting between Waterfront Trail and Dock Road on the east side of the Hood River.

For bicycle travel, the TSP identifies restriping projects on State Street (US 30) and OR 35 to provide bicycle lanes that would connect to the existing bicycle lanes on Button Bridge Road, located between the I-84 interchange and E. Marina Way. No indirect impacts to pedestrians or bicyclists are anticipated under the No Action Alternative.

Transit service would be directly impacted by the No Action Alternative from increased congestion projected for 2045, resulting in longer travel times and less reliable service in the API, as summarized in Exhibit 3-8. At such a time in the future that the bridge exceeds its operational life or a catastrophic event occurs and the bridge is closed, the No Action Alternative

would result in the indirect impacts of cross-river transit service likely being eliminated or requiring lengthy detours and longer travel times via the Bridge of the Gods or The Dalles Bridge.

Build Alternatives

Construction of the build alternatives would result in short-term impacts to pedestrians and bicycles using sidewalks and bicycle lanes in the API, including increased noise, dust, air pollution, and emissions, as well as additional traffic on detour routes, which could potentially increase conflicts with pedestrians and bicycles. Transit service would likely experience delays and reduced travel time reliability as a result of lane reductions, closures, and traffic detours, as listed in Exhibit 3-8.

In the long-term, the build alternatives would result in direct benefits to pedestrians and bicyclists. The replacement bridge would provide a barrier-separated shared use path as part of the transportation facility along the west side of the bridge for pedestrians and bicyclists. This would offer a new facility for people who want to walk or bike between Oregon and Washington and connect with the Waterfront Trail; no toll would be charged to pedestrians and bicyclists traveling on the shared use path.

Safe travel for people walking and cycling would be provided via the barrier-separated shared use path from vehicle travel lanes; however, crashes between cyclists and cyclists/pedestrians could occur on the shared use path. In addition, exposure to high winds for pedestrians and cyclists on the shared use path could be a safety concern during severe weather conditions.

Pedestrian connections to existing sidewalks would be available at marked crosswalks at the Button Bridge Road/E. Marina Way intersection in Oregon and the SR 14/Hood River Bridge intersection in Washington. Although the replacement bridge could result in additional pedestrian and bicycle demand, it would not affect access to any existing or planned bicycle facilities beyond these intersections. The potential for increased bicycle and pedestrian activity could result in the indirect impact of increasing the need for planned pedestrian and bicycle improvements nearby. The City of Hood River could consider increasing the priority and timing of these projects relative to what is identified in the TSP.

In addition, the replacement bridge would provide direct benefits to transit service with standard vehicle lanes and a higher design speed that would be expected to slightly improve travel times for transit service providers using the bridge. Service reliability could also be improved due to the presence of shoulders for disabled vehicles.

Depending on toll rates and transit costs, higher toll rates could potentially result in shifting some individuals from using their personal vehicles to cross the river to via non-motorized travel or taking transit, potentially resulting in slight increases in transit ridership.

Exhibit 3-8. Summary of Impacts and Benefits to Pedestrian, Bicycle, and Regional Transit Access

	No Action Alternative Compared to Existing Conditions	Preferred Alternative EC-2 and Alternative EC-3 Compared to No Action Alternative
Construction Impacts to Bicyclists and Pedestrians	• None	• Increased noise, dust, air pollution, and emissions • Temporary closure of Waterfront Trail access would require detour • Additional traffic on detour routes could increase conflicts
Long-term Impacts/Benefits for Bicyclists and Pedestrians	• No change	• New barrier separated shared use path for bicyclists and pedestrians • Improved safety for bicyclists and pedestrians • Access and connectivity to/from Waterfront Trail
Construction Impacts to Transit	• None	• Delays and reduced travel time reliability
Long-term Impacts/Benefits for Transit	• Increased transit travel times due to congestion • Decreased service reliability • Elimination of cross-river transit service if the bridge is closed or relocation to other bridges	• Improved travel time reliability

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to pedestrians and bicyclists traveling near the Project construction site:

- Pedestrian and bicycle access to Waterfront Trail would be maintained during construction. A signed, Americans with Disabilities Act (ADA) -accessible detour route would be provided when portions of the trail are temporarily closed during construction.
- Advanced notice about sidewalk, trail, and/or park closures and temporary access changes during construction would be provided.
- BMPs appropriate to the context would be developed for the Project prior to construction. These BMPs would be implemented during construction to reduce noise, dust, and pollutant emissions generated by construction equipment as further specified in Section 3.18, Air Quality and Greenhouse Gases, and Section 3.20, Noise and Vibration.

Long-Term Impacts

No long-term mitigation measures related to pedestrian, bicycle and transit access were identified.

Additional detail on pedestrian, bicycle, and transit access is provided in the Transportation Technical Report (Appendix N).

3.4. Land Use

Existing Conditions

Marketplace office and hotel suites at the Hood River Inn east of the existing bridge in Oregon.

The API contains a variety of land uses in Klickitat County, the City of White Salmon, and the City of Hood River. The City of Hood River has a higher concentration of existing development within the immediate vicinity of the bridge than the City of White Salmon and Klickitat County. The Washington portion of the API includes land within the city limits of White Salmon and Klickitat County. Land uses adjacent to the existing bridge include recreational areas, natural shoreline, a Native American TFAS (White Salmon TFAS) and fish processing facility (East White Salmon Fish Processing Facility), commercial uses, SR 14, and BNSF Railway tracks.

On the Oregon side, a handful of government uses have developed around the existing bridge in the City of Hood River, including the Port, Hood River Chamber of Commerce, and the Oregon Department of Motor Vehicles. The Port's Hood River Marina Park and Basin is located west of the existing bridge and includes a marina, beach, yacht club, boat launch, cruise ship dock, history museum, open lawn area, and parking. The existing bridge right-of-way (Button Bridge Road) north of E. Port Marina Drive is owned by the Port. Directly west of the existing bridge within this right-of-way there is some parking associated with the Port's administrative office, outdoor storage associated with the Port's maintenance shop, and a portion of the existing vehicle access to the administrative office and maintenance shop. West of the Port's right-of-way is a 12-acre parcel also owned by the Port, on which their administrative office, maintenance shop, boat launch and docks, a generator, and associated parking and access for these facilities is located.

A two-story mixed-use building (the Marketplace) contains primarily office uses with limited commercial space, as well as five hotel suites (Riverside Suites). The Best Western Plus Hood River Inn is the largest commercial user in the API, occupying multiple buildings east of the bridge and the Riverside Suites in the Marketplace building.

Within the API, the existing bridge and two build alternatives are located within two zoning designations – Riverfront District in the City of White Salmon and General Commercial in the City of Hood River. Each zoning designation would allow for the development of a replacement bridge subject to the proper land use procedures highlighted in the Land Use Technical Report.

Project Impacts and Benefits

No Action Alternative

All Project alternatives were examined for consistency with applicable federal, state, and local plans and development regulations. The No Action Alternative was considered inconsistent with various local and regional planning documents that advocate for enhancing economic development through the movement of goods throughout the region, providing better bicycle and pedestrian connections for recreation and commuting, and establishing safer transportation infrastructure for all modes of travel (Appendix I, Land Use Technical Report). Retaining the existing bridge in its current condition would have direct impacts; it can be expected that maintenance costs would increase overtime as the bridge continues to deteriorate until it reaches the end of its structural life. In addition, due to the bridges age, condition, and seismic vulnerability, a substantial event such as an earthquake or barge strike could close the bridge temporarily or permanently.

The No Action Alternative assumes that the bridge would be closed in the future when it surpasses its operational life. At such a time, indirect impacts of the No Action Alternative would include vehicles traveling over 20 miles one-way to cross the Columbia River using The Dalles Bridge or the Bridge of the Gods (Exhibit 3-9). If the bridge were to close, either at the end of its operational life or because of damage from an unforeseen event, existing and future land uses could be affected. The existing bridge has existed for over 90 years and development has oriented around this river crossing. As such, land uses have become intertwined overtime and are now interdependent. The existing bridge allows workers, customers, freight, and visitors to cross the river rather easily. In the absence of a bridge in this location, the area could experience slower growth and business viability decline. In addition, future businesses could be deterred from locating in the area or existing bridge-dependent businesses could relocate elsewhere.

Exhibit 3-9. Columbia River Bridge Crossings

Build Alternatives

Each build alternative would be consistent with applicable federal, state, and local plans and development regulations. Construction impacts from the build alternatives could include traffic congestion and delays, limited access and detours, equipment noise, and air and dust emissions. At least two staging areas would be necessary for staging and storage of materials and equipment; the location of these areas would be determined later in the design process. While property access to adjacent parcels could be limited, it would be maintained throughout the duration of construction and any construction-related impacts would be temporary and short-term. Both build alternatives would require temporary construction easements, including roughly 6.6 acres of easements under Alternative EC-2 and 4.6 acres of easements under Alternative EC-3.

Direct property impacts would vary by alternative:

- Alternative EC-2: 3 full parcel and 11 partial parcel acquisitions, 3 permanent easements, relocation of a gas utility transfer station and generator, removal of parking and storage space on Port property and the potential relocation of the Port's administrative office and/or maintenance shop, and removal of some parking spaces at the Heritage Plaza Park and Ride facility (Exhibit 3-10 and Exhibit 3-11).
- Alternative EC-3: 2 full parcel acquisitions, 9 partial parcel acquisitions, 3 permanent easements, removal of some parking spaces at the Heritage Plaza Park and Ride facility, and the displacement of 8 commercial businesses and 5 hotel suites (Exhibit 3-12 and Exhibit 3-13).

Each of these acquisitions would result in converting property to transportation use. The total amount of property conversion would not be large and the potential use of this land for transportation purposes would not substantially affect existing or planned uses on either side of the river. Alternative EC-3 would convert 4.3 acres of property to transportation uses while Alternative EC-2 would convert 3.0 acres. If displaced businesses under Alternative EC-3 relocated within the City of Hood River, jobs and local tax revenues would be retained in the community; if they relocated outside of the city or chose not to reopen, jobs and local tax revenues would be reduced.

As shown on Exhibit 3-14, some Port parking, outdoor storage, and a portion of the existing vehicle access to the Port's administrative office and maintenance shop is located within the existing bridge right-of-way. The bridge approach for Alternative EC-2 would be located in this right-of-way area, displacing these uses.

Exhibit 3-10. Impacts to Land Use Resources in Washington under the Preferred Alternative EC-2

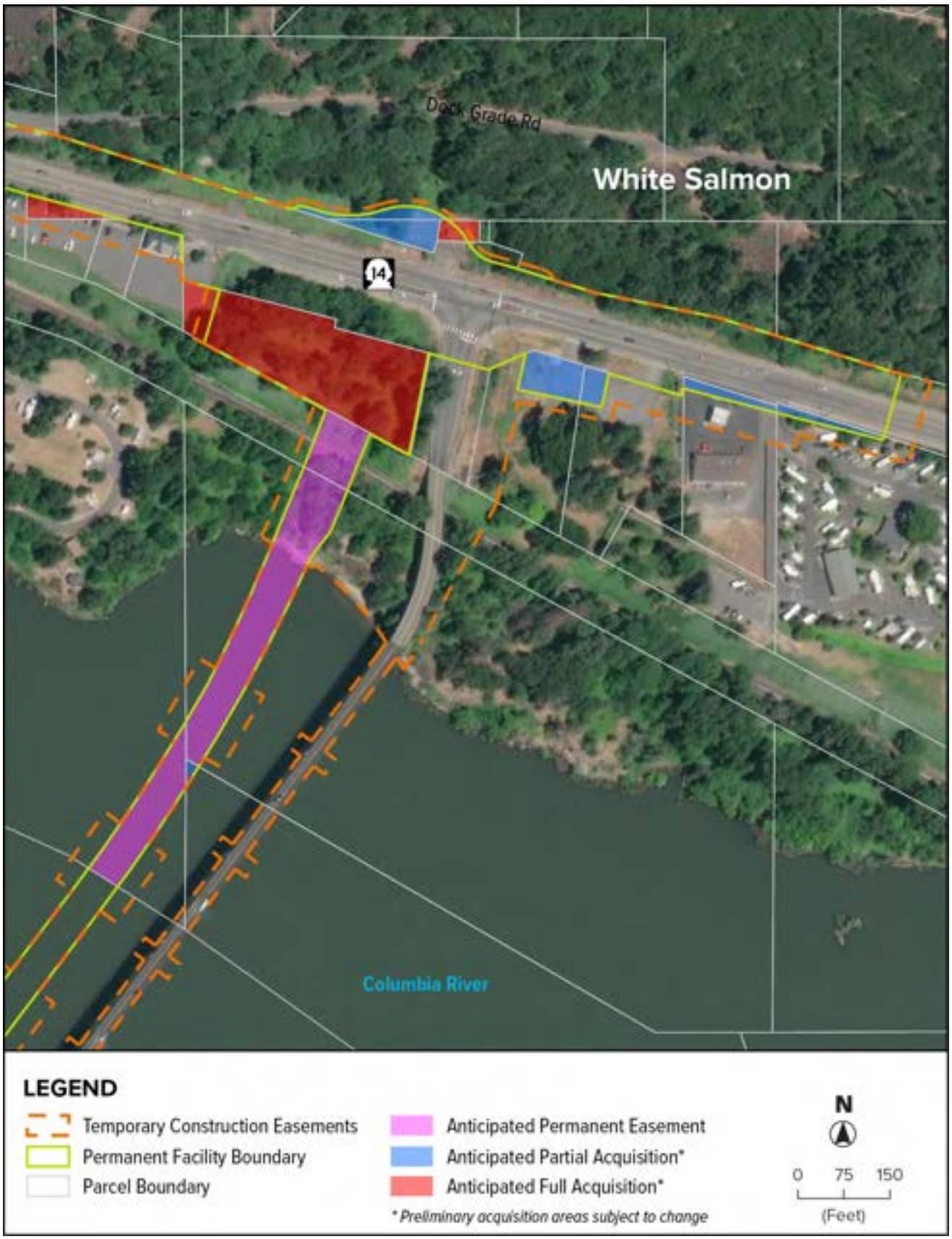


Exhibit 3-11. Impacts to Land Use Resources in Oregon under the Preferred Alternative EC-2

Exhibit 3-12. Impacts to Land Use Resources in Washington under Alternative EC-3

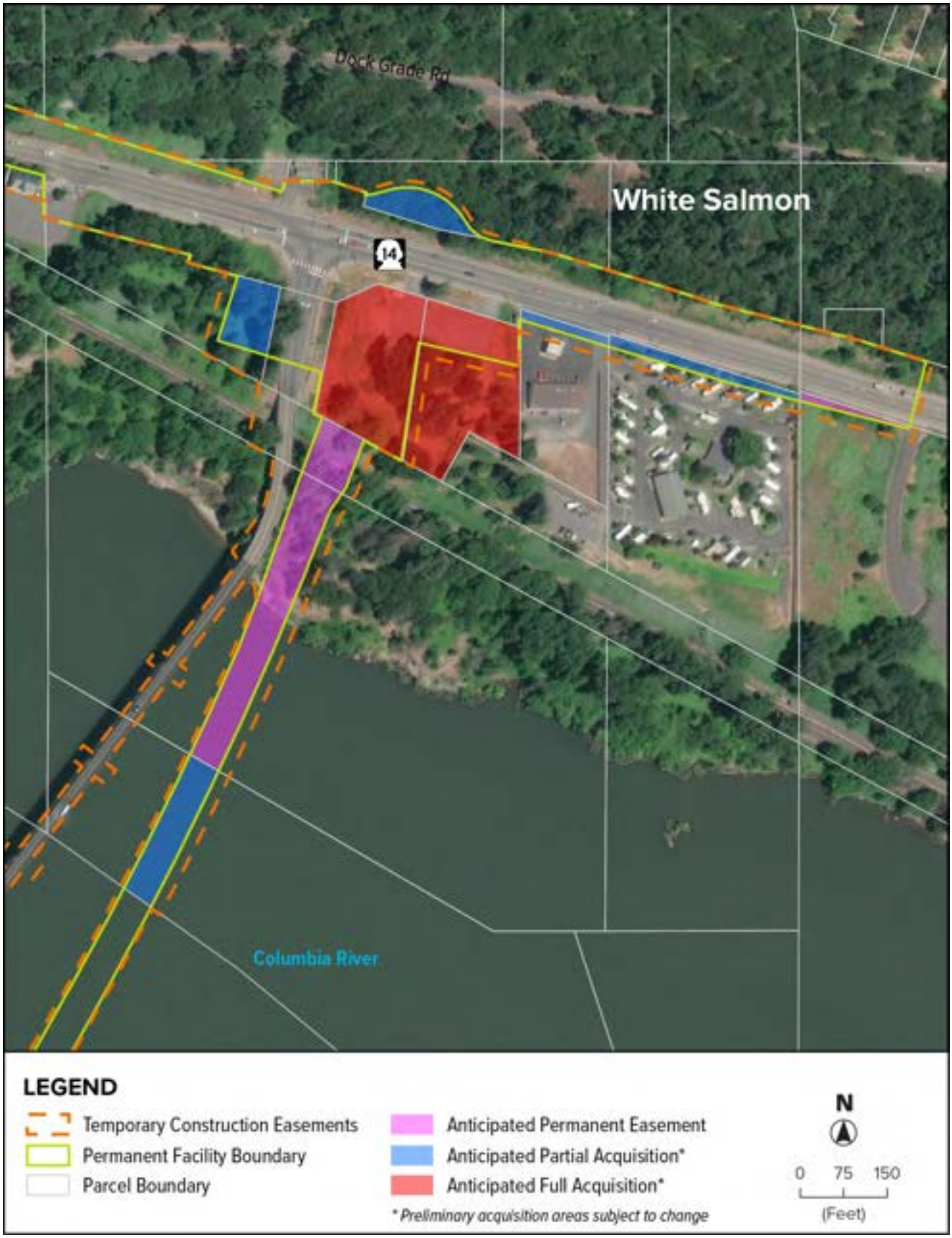
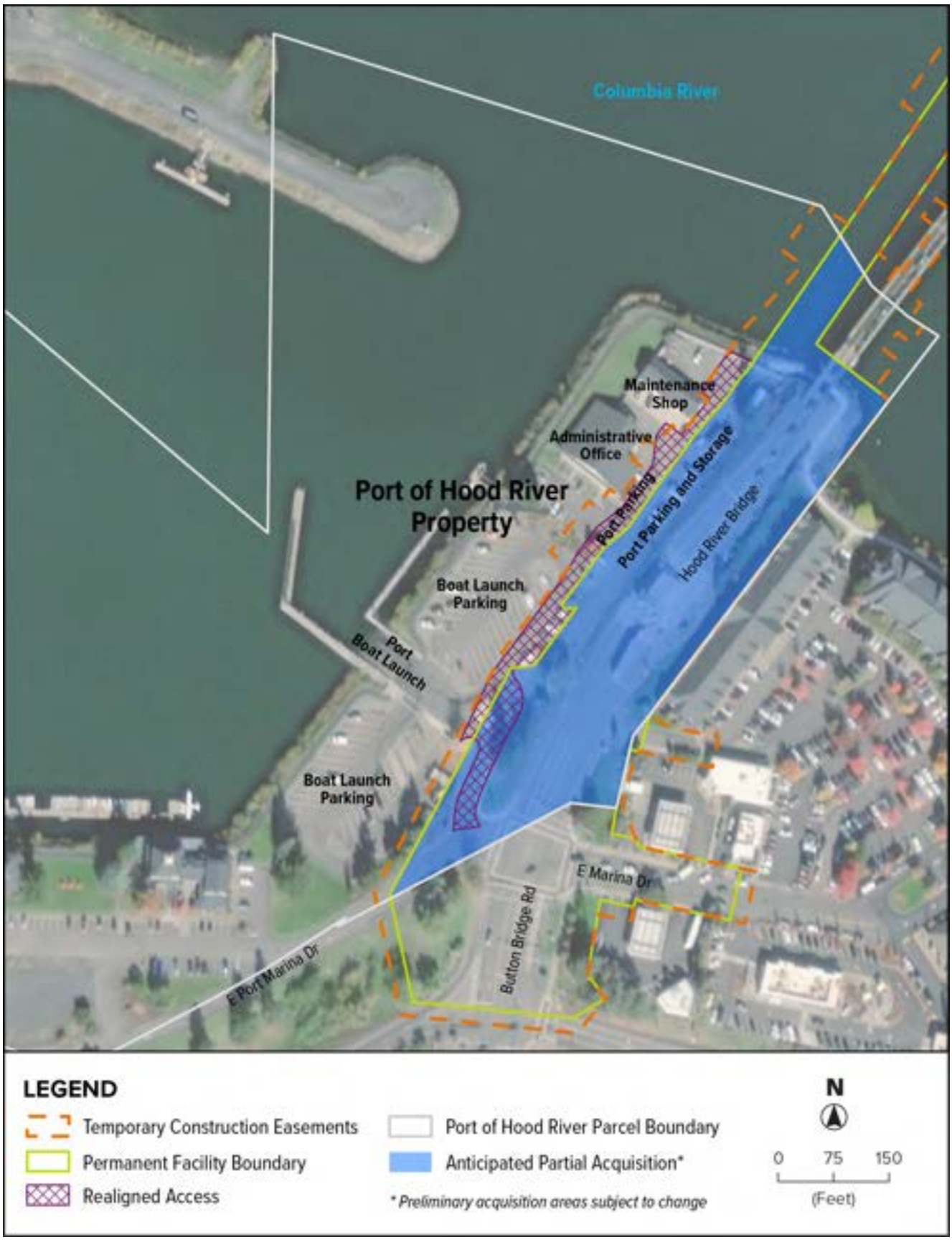


Exhibit 3-13. Impacts to Land Use Resources in Oregon under Alternative EC-3

Exhibit 3-14. Port of Hood River Land Use Impacts under the Preferred Alternative EC-2



In addition, construction activities of the bridge approach for Alternative EC-2 would encroach onto the Port parcel, located where the access road to the administrative office and maintenance shop is currently located; effectively eliminating this vehicle access to these buildings while this segment of the bridge is under construction. Employees and visitors accessing the administrative office during construction could park in the boat launch parking lot south of the office and then walk to the office. However, maintenance trucks and other large vehicles would still need to access the maintenance shop and would need a temporary, alternate route during construction. Once constructed, permanent access to the Port's administrative office, maintenance shop, boat launch, and parking would be realigned to the west of the existing access. A Port generator, located south of the administrative office along the existing access road, would also have to be relocated during construction as well as existing underground utility lines under the existing access road.

Under Alternative EC-2, long-term land use impacts to the Port property would include 1.2 acres of property acquisition and the loss of roughly 15 parking spaces supporting the administrative office and 3 parking spaces supporting the boat launch and docks. Roughly 2.6 acres of the existing bridge right-of-way that is owned by the Port would remain as right-of-way for the replacement bridge or be repurposed for new stormwater treatment facilities. The outdoor storage area that would be displaced would need to be relocated elsewhere on the Port's property near the maintenance shop, if the existing shop is not relocated.

If construction or permanent impacts to either the Port's administrative office and/or the maintenance shop occur that render the buildings nonfunctional, such as a detrimental permanent loss of parking for the administrative office, inability to find an alternative access for the maintenance shop during construction, inadequate horizontal clearance to the maintenance shop for large trucks after the access is realigned, or the permanent loss of storage area supporting the shop, then the buildings may be required to be relocated elsewhere on Port property.

Both build alternatives would require a permanent aerial easement over the BNSF Railway tracks and the future Bridge Park on the Washington side and would close an existing private access off Button Bridge Road in the City of Hood River. Alternative EC-2 would require an aerial easement to span the submerged portion of the White Salmon TFAS as well as an easement to place a bridge pier on TFAS property. Alternative EC-3 would require an easement on the East White Salmon Fish Processing Facility for road improvements to SR-14. Easements on tribal properties would require approval from the BIA (See Section 3.5, Treaty Fishing Rights, for more information to impacts to the White Salmon TFAS and East White Salmon Fish Processing Facility.) A USACE restrictive easement is located in-water and along portions of the Washington shoreline. One of the bridge piers would be located within this restrictive easement, requiring USACE Real Estate Action approval. Alternative EC-3, which is proposed east of the existing bridge, would directly affect future redevelopment of the Marketplace building into a hotel, as this bridge alignment would encroach onto this property. Additionally, Alternative EC-3 would create substandard access conditions for businesses east of the bridge along SR 14.

Indirectly, existing and future land uses stand to benefit from a replacement bridge, and economic conditions could be enhanced, as it would accommodate additional modes of travel between states from the addition of the shared use path, increase access for pedestrians and bicyclists, and improve the movement of goods and services throughout the region by providing a wider bridge without size and weight restrictions. Additional opportunities for bicycle tourism in the region would be provided with the new shared use path across the river. A future waterfront park ("Bridge Park") is planned under the existing bridge along the Washington shoreline. The existing bridge location was incorporated into the preliminary design for the park; therefore, an indirect impact of the build alternatives could be an alteration to the design of this future facility. Anticipated impacts to this future facility are described in the Project's Parks and Recreation Technical Report and Chapter 6, Section 4(f) Analysis.

A variety of future land uses are planned throughout the area to support growing populations in the cities of White Salmon, Bingen, and Hood River, indicating steady growth not tied to the replacement of the existing bridge. While these cities are experiencing steady growth, several factors constrain growth and would determine the extent to which growth takes place, including local comprehensive plans, zoning ordinances, and the CRGNSA Management Plan. Neither of the build alternatives would require any changes in zoning or comprehensive plan designations; and therefore, would not impact the type or density of development allowed in the area. Any infill development opportunities in urban areas surrounding the bridge are already planned for by local plans and growth is limited in the CRGNSA outside of urban areas. The existing bridge approach right-of-way may be repurposed for other uses such as stormwater facilities or accessways to other publicly-owned parcels near the river. If the right-of-way was vacated, developable land could be created; however, the amount of land created would be considered negligible. As such, the build alternatives would not be expected to influence growth in the area. Exhibit 3-15 summarizes land use impacts by alternative.

Exhibit 3-15. Summary of Impacts to Land Uses

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Localized Impacts	• No construction impacts	• Temporary localized impacts on land use, including traffic congestion and delay, reduced access, equipment noise, and air and dust emissions	
Temporary Construction Easement Acreage	• N/A	• 6.6 acres	• 4.6 acres
Plan Consistency	• Inconsistent with 9 plans and policies	• Consistent with all plans and policies	
Existing Bridge Retention	• Increased maintenance costs • Bridge closure due to unreasonable maintenance costs, reaching the end of its usable lifespan, or a catastrophic event rendering the bridge unusable	• N/A	
Property Acquisition Acreage	• N/A	• 3.0 acres	• 4.3 acres
Full Acquisitions	• N/A	• 3	• 2
Partial Acquisitions	• N/A	• 11	• 9
Permanent Easements	• N/A	• 4	• 3
Displacements/ Relocations	• N/A	• Portion of the Heritage Plaza Park and Ride Facility • Relocation of a gas utility transfer station • Relocation of a Port generator • Relocation or loss of a portion of Port parking supporting the administrative office, maintenance shop, and boat launch and docks • Potential relocation of Port administrative office and/or maintenance shop	• Portion of the Heritage Plaza Park and Ride facility • 8 commercial businesses and 5 hotel suites
Road Closures/ Access Changes	• N/A	• Closure of private access to uses east of Button Bridge Road • Realigned access to Port facilities	• Closure of private access to uses east of Button Bridge Road • Substandard access conditions for businesses east of bridge along SR 14
Planned Land Uses	• N/A	• No direct impacts to planned land uses are anticipated	• Direct impact to the planned redevelopment of the Marketplace building

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Indirect Impacts and Benefits	• Not seismically stable • Structurally and functionally limited (weight, height, and width restricted) • Limits to efficiency and scale of regional economy resulting from the future bridge closure	• Project would not likely increase population growth • Economic and community benefits due to increased bicycle and pedestrian access, tourism potential, and improvements to the movement of goods and services • Potential design revisions to the proposed Bridge Park	

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to land uses:

- Close coordination would be conducted with adjacent land and business owners to address conflicts and inconveniences from construction-related activities.
- Notice of upcoming traffic impacts would be provided to affected businesses and property owners on a frequent basis.
- Advanced notice of potential access or utility disruptions that could occur as a result of construction activities would be provided to affected property owners, tenants, and residents.
- To the extent practical, mature trees and existing vegetation would be preserved to retain a visual screen between construction activities and surrounding areas.
- To the extent practical, API staging areas would be shielded from, or located outside, the view range of neighborhoods and high activity recreation sites.

Long-Term Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate long-term impacts to land uses:

- Landscaping and any site furnishings removed during reconstruction of Button Bridge Road would be replaced and restored to their original condition.
- All acquisition of real property required for the construction of the replacement bridge would comply with the requirements of the federal Uniform Act , the Washington Relocation Assistance – Real Property Acquisition Policy (RCW 8.26), or the Oregon Relocation of Displaced Persons statutes (Oregon Revised Statutes [ORS] 35.500 – 35.530).
- Unless otherwise waived or adjusted by the applicable federal, state, or local agency, substantive requirements of the applicable federal, bi-state, state, and local land use statutes, including zoning, shorelines, and critical area regulations, would be followed to protect land uses, resource lands, and critical areas.

Additional detail on land use resources is provided in the Land Use Technical Report (Appendix I).

3.5. Treaty Fishing Rights

Existing Conditions

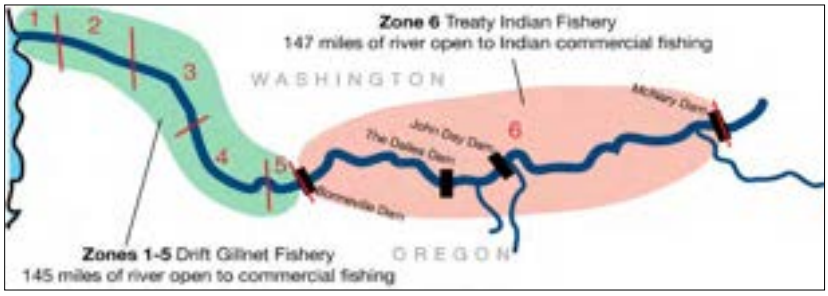
Source: CRITFC
The reservations and ceded lands of the four Columbia River treaty tribes

Tribal communities have been present in the Columbia River Gorge since time immemorial. Fishing, hunting, and gathering were and continue to be central practices of their culture. Specifically, fishing for salmon, steelhead, lamprey, sturgeon, and other species has been a focus of their presence along the Columbia and in the Gorge. Fish caught in the Columbia River provide sustenance and ceremonial resources that were and continue to be of great importance to indigenous tribes on the river (CRITFC 2014). In 1855, a number of tribes with ties to the Columbia River entered into multiple treaties with the U.S. government; becoming four federally-recognized tribes while ceding millions of acres of their lands to the U.S. The tribes reserved lands that now constitute their reservations, as well as the rights to fish at their usual and accustomed places and the rights to hunt, gather, and graze. This included areas both on and off their reservations, and those rights continue to the present. The four tribes with those reserved rights are commonly referred to as the Columbia River treaty tribes and include the Warm Springs, CTUIR, the Yakama Nation, and the Nez Perce Tribe (CRITFC 2020a).

Beginning in 1923, the USACE surveyed the Columbia River and recommended numerous dams to provide navigation, hydropower, flood control, and irrigation (Wilma 2006). A consequence of the subsequent dam building was that traditional tribal fishing grounds along the Columbia River were inundated behind the dams and fish populations were severely impacted. Under various federal and state court rulings, reserved treaty rights to fish at "usual and accustomed" places are a protected property right for Columbia River treaty tribes and these places should be considered or protected under NEPA and Section 106 of the NHPA, as they involve important historical and cultural aspects of Native American heritage (CTUIR 2019).

To account for the hundreds and hundreds of tribal fishing grounds, sites, and villages that were inundated by dam construction, the U.S. Congress set out to provide various sites along the Columbia River within what is now known as Zone 6; a 147-mile stretch of the river between the Bonneville and McNary dams (Exhibit 3-16). Congress authorized the acquisition and construction of these "In-Lieu" sites in the Rivers and Harbors Act of 1945. Between 1945 and 1988, five sites were established totaling approximately 42 acres but fell into disrepair under management of the Bureau of Indian Affairs (BIA). The passage of legislation in 1988, Title IV of Public Law 100-581, authorized restoration of the five original In Lieu sites and construction of other Treaty Fishing Access Sites (TFAS), a total of thirty-one fishing sites were ultimately developed along Zone 6 to provide tribal fishers access to the Columbia River. Of these sites, 26 are TFAS and 5 are In-Lieu sites (CRITFC 2020c). These fishing sites were established under the U.S. Congress, owned by the U.S. Department of Interior (DOI), and administered by the BIA. CRITFC, a subdivision of the four Columbia River treaty tribes, operates and maintains the fishing sites under a long-term contract with the BIA (CRITFC 2020d). In addition to the fishing sites, fish processing facilities were established along the Columbia River to process and sell fish in a safe and clean environment (USACE 2013).

Exhibit 3-16. Columbia River Zone 6 Treaty Indian Fishery



For fisheries management purposes, the entire stretch of the Columbia River is divided into six zones. Zone 6 is an exclusive commercial fishing area reserved for the four Columbia River treaty tribes (CRITFC 2020b). Source: CRITFC

As shown on Exhibit 3-17, two TFAS, one In-Lieu site, and one fish processing facility are located near the existing bridge, including the White Salmon TFAS, East White Salmon Fish Processing Facility, Underwood In-Lieu site, and Stanley Rock TFAS (CRITFC 2020c). The White Salmon TFAS is a roughly 10-acre site on a parcel that borders the existing bridge to the west and includes camp sites, a fish cleaning station, floating dock and boat ramp, net repair and storage facilities, parking, and access to S. Dock Grade Road. The site also includes a structure for ceremonial activities. Tribal fishers reside at the White Salmon TFAS year-round, with over-lapping short-term and long-term stays at the site. Some residents of this site fish at night, including drift net fishing in the Columbia River channel, and rest during the day (CRITFC 2020h). Fishers at this site also utilize the existing bridge piers to tie up boats and gill nets. Another feature of the White Salmon TFAS that is valued by residents are the scenic views of Mt. Hood to the southwest. Due to sedimentation along the Washington shoreline, vessel access to the site is limited to a narrowly dredged side channel which connects to the main Columbia River channel.

Exhibit 3-17. Treaty Fishing Access and Processing Sites

The East White Salmon Fish Processing Facility is a roughly 7-acre site located along SR 14, 0.25 mile east of the existing bridge and includes a loading dock, fish delivery area and parking, freezer storage space, and administrative space (USACE 2013). This facility does not have river access. The BIA also owns an additional parcel to the south of this facility that includes a stormwater outfall associated with the processing plant.

The Underwood In-Lieu site is a roughly 5-acre site located approximately 1.5 miles west of the existing bridge at the confluence of the White Salmon River and Columbia River in Skamania County. Underwood includes a boat launch, dock, and parking and is accessed via Cook-Underwood Road. The mouth of the White Salmon River is particularly significant both as a confluence and as a prominent fishing location. Roughly 0.25 mile east of the Underwood In-Lieu site near the confluence is a parcel owned by the Nez Perce Tribe that was purchased in 1994. While not a designated In-Lieu site or TFAS, this site is an important fishing location for the Nez Perce Tribe (Watters 2020c).

The Stanley Rock TFAS is a roughly 12.5-acre site located approximately 1.5 miles east of the existing bridge in Hood River County and includes camp sites, boat launch and dock, parking, and access to I-84 (Google 2020). Along with the White Salmon TFAS, it is common practice for tribal fishers to use these three treaty fishing sites in conjunction with each other, with the existing bridge providing an important connection between sites.

The activity of fishing and the fisheries that live in and migrate the Columbia River have an integrated commercial and subsistence importance to the Columbia River treaty tribes, as well as a ceremonial and religious importance tied to place and the continuity of tribal culture. Salmon, in particular, have been an integral part of tribal religion, culture, and physical sustenance. Salmon are one of the traditional "First Foods" that are honored at tribal ceremonies (CRITFC 2020e). Salmon and their waters contribute to a sense of place; fishing for salmon is just as integral an aspect of tribal culture as consuming or selling it. The activity of fishing helps establish tribal members appreciation for the land, the water, and the fish within these waters, and the annual salmon harvest allows the transfer of these values from generation to generation (CRITFC 2020f).

Ceremonial fishing occurs predominately during the spring to provide fish for specific ceremonial purposes or events. Subsistence fishing includes fishing for family or personal consumption and can also be used to barter with other federally-recognized tribes. Fisheries are managed with the intent to have some subsistence fisheries open year-round. Commercial fishing is deeply rooted in tribal cultures as well as providing economic benefits to tribal fishers. Commercial fisheries occur in the fall, winter, summer, and occasionally in mid-to-late spring with most fish that are commercially-harvested by the tribes are caught using gill nets (CRITFC 2014).

Tribal Consultation

Consultation regarding potential impacts to treaty fishing rights on the Columbia River, including at the White Salmon TFAS, East White Salmon Fish Processing Facility, Underwood In-Lieu site, and Stanley Rock TFAS has been undertaken by ODOT and FHWA with the Columbia River treaty tribes, along with coordination with the U.S. BIA and CRITFC. In addition, consultation has occurred with the Cowlitz Indian Tribe, CTSI, and the Grand Ronde. To date, consultation on treaty fishing rights has included meetings and presentations with the U.S. BIA, CRITFC, and the Cultural Resources Committee and Fish and Wildlife Commission of the CTUIR. Members of the Project team met with CRITFC's maintenance manager at the White Salmon TFAS to tour the site and the Port sends monthly updates regarding the Project to key elected tribal leaders. In addition, the Warm Springs, the Yakama Nation, and the Nez Perce Tribe prepared confidential ethnographic studies to describe their respective tribes' culture and customs that pertain to this area of the Columbia River Gorge. Tribal consultation is discussed further in Chapter 5, Public Involvement, Agency Coordination, and Tribal Consultation.

Consultation with the tribes has provided key background information about the importance and use of tribal fishing sites and fisheries, as well as concerns about the impacts from the Project to these resources. From the consultation that has occurred to date, concerns are generally focused around construction impacts to the White Salmon TFAS (site). These concerns include noise impacts at the site and to in-water fishers, limited road and vessel access, turbidity and under-water noise, night fishing and safety concerns regarding in-water construction materials, sediment build-up, construction debris drifting to the site, and in-water work overlapping with ceremonial and subsistence fishing seasons. Long-term concerns from the Project would include permanent easements on the site from the placement of a bridge pier and the overhead bridge deck, garbage being thrown off the new shared use path and drifting to the site, as well as increased visibility of the site from non-tribal members using the shared use path that could lead to unauthorized access of the site (CRITFC 2020h) and/or decrease privacy for residents, ceremonial activities, and general use of the site. In addition, the existing bridge piers near the site are utilized to tie up boats and gill nets.

Consultation with the tribes are ongoing, including discussions regarding potential impacts to cultural resources, tribal fishing sites, access to the river, fishing activities from the shoreline and in the river, and fisheries. Future in-person consultation between the Project team and the tribes has been delayed indefinitely due to the coronavirus disease 2019 (COVID-19) pandemic. Tribes have been particularly impacted by the COVID-19 pandemic, which has resulted in tribal government shut-downs and limited access for members to tribal committees. Alternative methods to solicit input from tribes and tribal fishers are being planned -as direct contact will not likely be possible while the pandemic continues. These methods include virtual meetings with tribes individually and collectively, as well as engaging tribal fishers directly (contact free) by placing signage and renderings at tribal fishing sites and requesting feedback. In addition, the Port continues to look for opportunities to engage with the Yakama Nation at its quarterly fishers' meetings and participate in the annual Columbia River Indian Fishers Expo hosted by CRITFC. Ultimately, the Project team, specifically the Port, seeks to continue consultation through and beyond the NEPA process and replacement bridge construction to develop a long-term relationship with the tribes.

Project Impacts and Benefits

No Action Alternative

The No Action Alternative assumes that the bridge would be closed in the future when it surpasses its operational life. In addition, due to the bridges age, condition, and seismic vulnerability, a substantial event such as an earthquake or barge strike could close the bridge temporarily or permanently. If the bridge were to close, either at the end of its operational life or because of damage from an unforeseen event, tribal fishers that cross the bridge to reach the fishing sites or processing facility would have to travel over 20 miles one-way to cross the Columbia River using The Dalles Bridge or the Bridge of the Gods. Relating specifically to the White Salmon TFAS, the No Action Alternative would not provide spill and stormwater runoff protection near the site and would not provide any long-term benefits to benthic habitat.

Build Alternatives

Construction of the build alternatives would lead to different degrees of impacts to tribal fishing and use of the processing site near the bridge (Exhibit 3-18). The White Salmon TFAS would experience the greatest amount of construction impacts under Alternative EC-2, due to the proximity of this bridge alternative and the site, as well as the presence of residents and fishing activities at this site year-round. As detailed below, construction-related impacts to the White Salmon TFAS would include an increased amount of air and dust emissions, noise, underwater noise, vibration, and turbidity, temporary restrictions to nearshore fishing areas, traffic congestion and delays, and detours to access the site by vehicle. These impacts would also occur to the White Salmon TFAS under Alternative EC-3 but would be to a lesser extent.

The East White Salmon Fish Processing Facility would experience the greatest amount of construction impacts under Alternative EC-3 due to the proximity of this alternative and the site. Construction-related impacts to the processing facility would include an increased amount of air and dust emissions, noise, traffic congestion and delays, and vehicle detours to the site under both build alternatives.

Alternative EC-2 would require approximately 0.4 acre of temporary construction easements at the White Salmon TFAS; this easement would be on the southeast corner of the parcel (submerged) for construction of one bridge pier. Alternative EC-3 would require approximately 0.03 acre of temporary construction easements at the White Salmon TFAS and 0.1 acre at the East White Salmon Fish Processing Facility for work along SR 14 associated with highway improvements. Construction impacts from the build alternatives to the Underwood In-Lieu site, Stanley Rock TFAS, and the Nez Perce Tribe property would be minimal due to these sites being over 1 mile away and would be limited to traffic congestion, delays, and detours to the sites.

Property Impacts

Alternative EC-2 would encroach onto the White Salmon TFAS parcel and require approximately 0.3 acre of permanent land easement for the placement of a bridge pier. As shown on Exhibit 3-19, this encroachment and permanent land easement would occur on a submerged portion of the parcel, which was platted prior to construction of the Bonneville Dam and then submerged under what is now known as the Bonneville Pool. In addition, an aerial easement would be required for the overhead bridge deck across this site. These easements would not change the overall function of the site but would bring bridge users closer to the site and near-shore fishing areas. While the replacement bridge would have barriers and railings, some debris from vehicle travel could become airborne and fall onto the submerged portion of the White Salmon TFAS under Alternative EC-2 (see Shared Use Path section below regarding the potential for debris and garbage from pedestrians and bicyclists to be thrown or blown off the bridge).

Residents and fishers at the White Salmon TFAS could be expected to have a higher sensitivity to changes in the visual environment than other uses or sites during Project construction due to the site's close proximity to construction activities. Once constructed, residents and fishers would encounter a taller bridge with fewer in-water piers as compared with the existing bridge, opening larger viewing windows along the river and to surrounding landscapes.

As shown on Exhibit 3-20, Alternative EC-3 would require approximately 0.04 acre of permanent easement on the East White Salmon Fish Processing Facility parcel for road improvements to SR 14.

While property access could be limited and require short detours due to construction work areas, access would be maintained throughout the duration of construction and would be temporary and short-term. River access to/from the White Salmon TFAS, Underwood In-Lieu site, Stanley Rock TFAS, and the Nez Perce Tribe's property would all be maintained throughout the duration of construction with some limitations for safe navigation around construction barges, equipment, and activities. These limitations during construction would not significantly impact vessel navigation to these sites. Due to sediment buildup near the White Salmon TFAS, a channel had to be dredged to access the site from the main Columbia River channel. This side channel would also be maintained during construction to preserve vessel access to/from the site. (See further discussion below regarding sedimentation from the Project.)

Noise would be temporarily increased at the White Salmon TFAS and East White Salmon Fish Processing Facility during construction. Noise impacts would be the greatest at the White Salmon TFAS due to the presence of year-round residents and ceremonial activities. Near-shore fishers at the White Salmon TFAS would also be impacted by construction noise. In addition, some residents of this site fish at night and rest during the day; as prescribed construction hours are during the daytime, construction activities could disturb these fishers' schedules. The contractor would be required to comply with all state and local sound control and noise level rules, regulations, and ordinances and utilize equipment that complies with noise standards of the U.S. Environmental Protection Agency (EPA). Once construction is completed, noise near these sites would return to current noise levels. Along with an increase in noise during construction, the presence of construction workers along the shoreline and in the river may intrude on the privacy of residents, fishers, and/or ceremonial activities at the White Salmon TFAS.

Construction-related activities would also result in increased particulate matter in the form of fugitive dust, as well as exhaust emissions from material delivery trucks, construction equipment, workers' private vehicles, and any associated traffic delays near the White Salmon TFAS and East White Salmon Fish Processing Facility. Any construction work performed would be required to take precautions limiting fugitive dust emissions to not to create a nuisance. Dust and exhaust emissions would be minor and short-term in duration and would not result in adverse or long-term impacts to these sites or tribal members using the sites.

Fish and Fish Habitat

The portions of the Columbia River that are within the API are used by several native and non-native fish species, including species with special regulatory status at either the state or federal level, and important fish species to the Columbia River treaty tribes. These include populations of anadromous salmon, steelhead, and bull trout, which are listed under the federal ESA, as well as Pacific Lamprey and North American green sturgeon, which are Washington State priority species. Additional native fish species include white sturgeon, river lamprey, northern pikeminnow, and rainbow trout, among others. Non-native fish species are also common within the waters of the API and include largemouth bass, smallmouth bass, crappies, and walleye.

Under both build alternatives, there would be over-water and in-water work that have the potential to discharge contaminants into the river near the White Salmon TFAS. Potential sources include uncontained construction and demolition debris, leaks and/or spills from construction and demolition equipment, marine vessels, and contaminated materials from demolition of the existing bridge. These potential temporary impacts could affect fish and their habitat function by reducing water quality, reducing visibility, and by reducing habitat for species susceptible to predation. Avoidance and mitigation measures would be employed during construction and demolition to prevent and account for unanticipated discharges into the river.

Due to the steel grated deck of the existing bridge, stormwater and spills currently discharge directly into the Columbia River, carrying various pollutants that effect aquatic organisms including fish species will special regulatory status and culturally sensitive fish species. The build alternatives would be required to construct and maintain stormwater treatment facilities to account for runoff, and the bridge would be constructed with a concrete bridge deck, preventing direct spills and discharges to the river; thereby, reducing impacts to fish and fish habitat compared to the No Action Alternative.

The replacement bridge would result in an increase in the quantity of over-water coverage and shading on the White Salmon TFAS parcel compared to the existing bridge, which can create habitat for predatory species and affect habitat suitability for juvenile salmonids and other aquatic species. The effects to habitat function from overwater shading would be minimal given the height and open structure of the replacement bridge. The new structure would be elevated between approximately 20 feet and 94 feet above the water's surface over the length of the bridge. This would greatly reduce the potential impact of shading. The existing bridge is approximately 57 feet above the water. The shading created from the replacement bridge would be constantly moving, and the shape and intensity of the shading would not be a solid dark area but a more diffuse irregular shape. This reduces the extent of the functional impact of the shading. The biological assessment (BA) (Appendix B) for the Project has determined that the impacts to habitat functions for this increase in coverage would be insignificant.

Lighting on the river surface at night has the potential to impact out-migrating juvenile salmon by increasing their visibility to predatory fish species. Construction of the replacement bridge and removal of the existing bridge would occur during prescribed day-time construction hours and within an IWWW (see below) that avoids peak run timing for juvenile salmon. Construction lighting on the river surface would be avoided or very minimal and is not expected to have an impact on out-migrating juvenile salmon.

As mentioned, vessel access to and from the White Salmon TFAS is limited due to sediment build-up. In-water work activities could disturb sediments and temporarily elevate turbidity levels above background conditions within the vicinity of the Project. The geographic extent and duration of any potential increases in turbidity are expected to be limited and short-term. Installation of piles, drilled shafts, and cofferdam piles disturb relatively small amounts of material, and the potential for generating turbidity is greatly reduced. Activities conducted within cofferdams or other isolated work areas near the site would introduce only minimal amounts of sediment into the water. Water would be allowed to settle before removing cofferdams to minimize the turbidity plume, and turbidity would not be allowed to exceed the levels, distance, or duration specified in the permits for the activity. Because periods of elevated turbidity associated with the Project would be short-term in nature, and fish are not confined to the immediate project vicinity, prolonged exposure would not occur. In addition, the implementation of BMPs would help ensure that these effects would be localized and temporary, limited in duration, and would result in minimal impacts to water quality. These BMPs would ensure that the amount and extent of turbidity would meet the terms and conditions of water quality permits that would ultimately be issued for the project, in particular the Section 401 Water Quality Certifications that would be obtained from Oregon DEQ and Ecology.

Elevated underwater noise has the potential to affect fish species, such as temporary avoidance of the area, changes in migratory routes, predator avoidance, or interruption of reproduction. The loudest source of underwater noise from construction would come from the impact installation of the structural piles for the replacement bridge and the removal of piles of the existing bridge. While pile construction could potentially affect some adult and/or juvenile fish, these disturbance-level effects would not be expected to significantly interfere with behaviors such as migration, rearing, or foraging (Appendix E, Fish and Wildlife Technical Report). The Project has been designed to minimize the likelihood of any impacts resulting from pile installation/deconstruction activities. To account for underwater noise on or near the White Salmon TFAS parcel, various minimization and avoidance measures would occur that would decrease fish impacts from underwater noise, such as bridge pile installation via vibratory hammer, installation of a bubble curtain to attenuate underwater noise, and adhering to approved in-water work periods. The bubble curtain would be consistent with standard NOAA Fisheries/USFWS bubble curtain specifications and a hydroacoustic monitoring plan would be developed and implemented confirm the effectiveness of the curtain. The geographic extent and duration of the elevated underwater noise would be temporary and localized and would return to ambient conditions when construction is completed. As detailed in the Fish and Wildlife Technical Report (Appendix E), vibratory pile driving and removal is not likely to adversely affect any fish species.

The permanent installation of bridge piles and footings would result in the permanent loss of benthic habitat within the Columbia River. However, the replacement bridge would have fewer in-water piers than the existing bridge, resulting in a net reduction in permanent impacts of approximately 0.2 acre in benthic habitat due to less acreage devoted to bridge footings once the existing bridge is removed.

For more information about potential impacts and mitigations to fish species, fish habitats, and water quality, see Appendix E, Fish and Wildlife Technical Report, Appendix Q, Waterways and Water Quality Technical Report, and Appendix B, Biological Assessment. A Biological Opinion will be included in Appendix B of the Final EIS/ROD once ESA Section 7 consultation is complete.

Tribal Fishing

Some tribal fishing practices near and on the existing bridge could be impacted by the construction and establishment of the replacement bridge. Certain construction and removal activities in the Columbia River would be restricted to an IWWW. Preliminary discussions with WDFW, ODFW, NOAA Fisheries, and USFWS indicate that in-water work activities would likely be restricted to October 1 – March 15 of each year. Tribal fishing seasons are determined by the fish runs and include input by CRITFC and vary by tribe, occur year-round, and sometimes without set timeframes. As such, it would not be possible to avoid an overlap of the IWWW for the Project and all tribal fishing seasons. While there is no single work window that avoids all fish species, the proposed October 1 – March 15 window was determined to be the most biologically defensible window for the Project, as it allows for an expedited construction schedule, while avoiding the peak run timing of both adult and juvenile salmon and steelhead. This proposed IWWW also avoids extending into important spring fishing seasons for the tribes, including ceremonial fishing and sturgeon fishing.

The existing bridge piers are utilized by some tribal fishers for tying up boats as well as gill nets. The replacement bridge would have fewer bridge piers than the existing bridge, potentially decreasing opportunities for tribal fishers to tie up boats or gill nets. During construction, tying up boats or gill nets to bridge piers would be limited to piers outside of designated construction zones. Construction for the replacement bridge could lead to an increase of construction debris in the river near fishing areas; however, avoidance measures would be employed during construction to prevent unanticipated discharges into the river. While the replacement bridge is being constructed, the existing bridge would remain in place, resulting in an increase of in-water structures and other objects (e.g., barges) for fishers to maneuver around. As mentioned, some tribal fishing occurs at night, including drift net fishing in the Columbia River channel. The increase of in-water structures and other objects may present safety issues, especially for nighttime fishers.

Shared Use Path

The existing bridge does not accommodate pedestrians and bicycles. The build alternatives include a shared use path that would establish a pedestrian and bicycle connection across the river that tribal fishers could use in addition to vehicle travel to the nearby fishing and processing sites. The shared use path would increase visibility of the White Salmon TFAS for non-tribal pedestrians and bicyclists and, under Alternative EC-2, would bring people walking and biking in close proximity of the White Salmon TFAS. CRITFC has expressed concern that new pedestrian and bicycle facilities near this site could increase unauthorized access based on experiences with other TFASs on the Columbia River (CRITFC 2020h). Increased visibility of the White Salmon TFAS from the shared use path could also decrease privacy for ceremonial activities and for short and long-term residents of the site. In addition, there could also be an increase of garbage and debris in the river near the site from pedestrians and bicyclists using the shared use path.

Exhibit 3-18. Summary of Impacts and Benefits to Treaty Fishing and Processing Sites

		No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Construction Impacts	White Salmon TFAS	• None	• 0.4 acre of temporary construction easements	• 0.03 acre of temporary construction easements
			• Air and dust emissions, visual impacts, privacy concerns, noise, underwater noise, vibration, turbidity and sediment, temporary limitations to nearshore fishing areas, traffic congestion and delays, and detours to the site	
			• Increased safety issues due to in-water obstacles for fishers to maneuver around	
	East White Salmon Fish Processing Facility	• None	• No temporary construction easements	• 0.1 acre of temporary construction easements
			• Air and dust emissions, noise, traffic congestion and delays, and detours to the site	
	Underwood In-Lieu Site	• None	• Minor traffic congestion, delays, and detours to the sites	
	Stanley Rock TFAS			
	Nez Perce Tribe Property			
Direct Impacts	White Salmon TFAS	• N/A	• 0.3 acre of permanent easement	• No permanent easement
			• Aerial easement	• No aerial easement
	East White Salmon Fish Processing Facility	• N/A	• No permanent easement	• 0.04 acre of permanent easement
	Underwood In-Lieu Site	• N/A	• None	
	Stanley Rock TFAS	• N/A	• None	
	Nez Perce Tribe Property	• N/A	• None	

		No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Indirect Impacts and Benefits	White Salmon TFAS	• Continued risk of spills discharging to the Columbia River	• Minimized risk of spills discharging to the Columbia River due to the concrete deck; new stormwater treatment facilities	
		• Continued risk of garbage and debris from bridge	• Potential for an increase in vehicle debris on the submerged portion of the site and garbage and debris from pedestrians and bicyclists using the new shared use path	• Potential increase of garbage and debris from pedestrians and bicyclists using the new shared use path
		• Greater benthic habitat loss due to existing in-water piers	• Net reduction in permanent impacts to benthic habitat once existing bridge is removed	
		• Lowest over-water structure/in-water shading on site	• Highest over-water structure/in-water shading on site	
		• Greater number of bridge piers to tie boats and gill nets to	• Decreased opportunities for tying up boats and gill nets due to less bridge piers	
		• Potential for unauthorized use of site	• Potential for an increase in unauthorized use of site due to proximity of new shared use path	
		• Residential and ceremonial privacy concerns	• Potential for a decrease in privacy for residents and ceremonial practices due to proximity of new shared use path	
		• Bridge remains exclusively for vehicles • Eventual bridge closure would require use of an alternate crossing to access all sites	• New pedestrian/bicycle connection across the river • Bridge access maintained	
	East White Salmon Fish Processing Facility	• Bridge remains exclusively for vehicles • Eventual bridge closure would require use of an alternate crossing to access all sites	• New pedestrian/bicycle connection across the river • Bridge access maintained	
	Underwood In-Lieu Site			
	Stanley Rock TFAS			
	Nez Perce Tribe Property			

Exhibit 3-19. Impacts to White Salmon TFAS under the Preferred Alternative EC-2

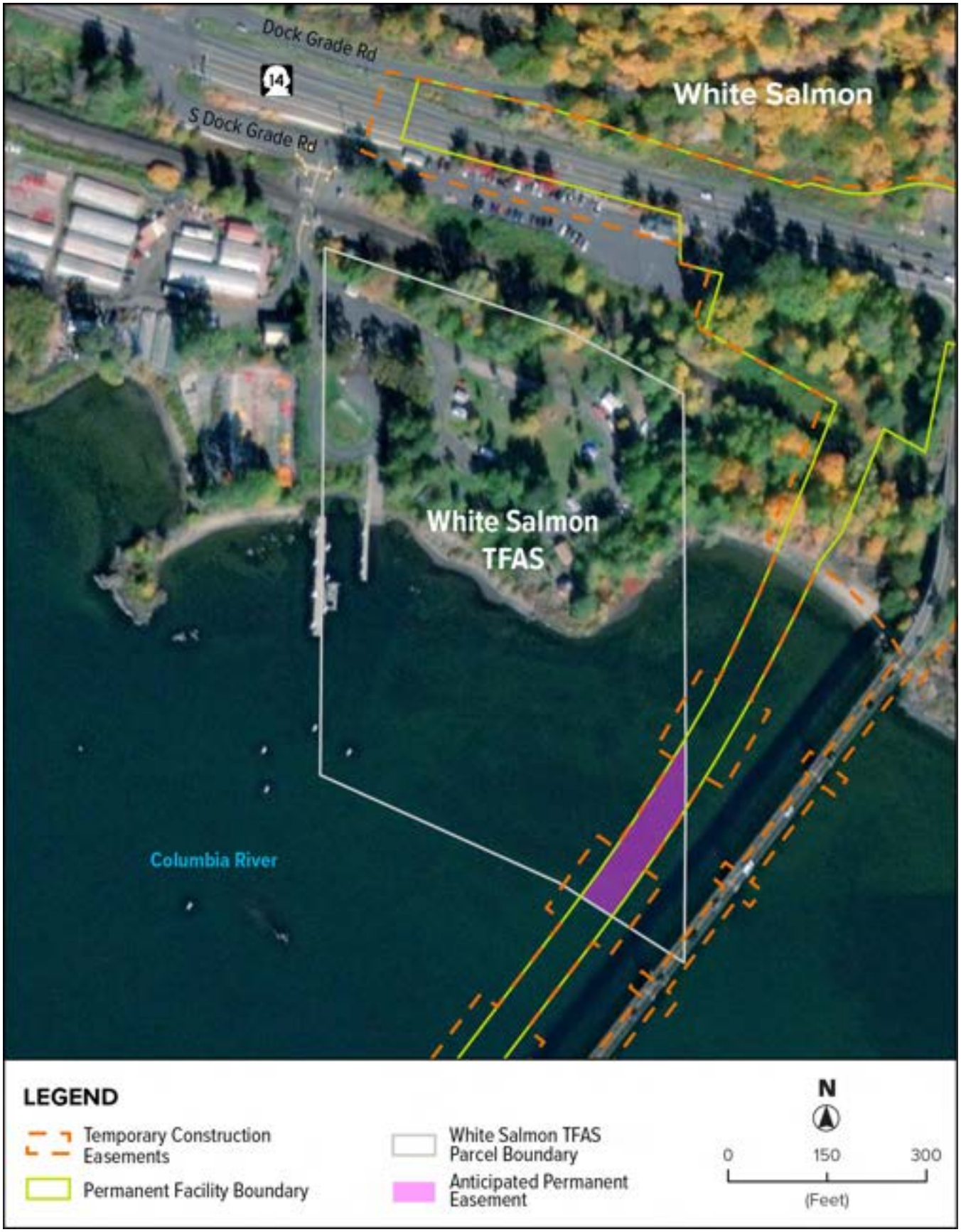
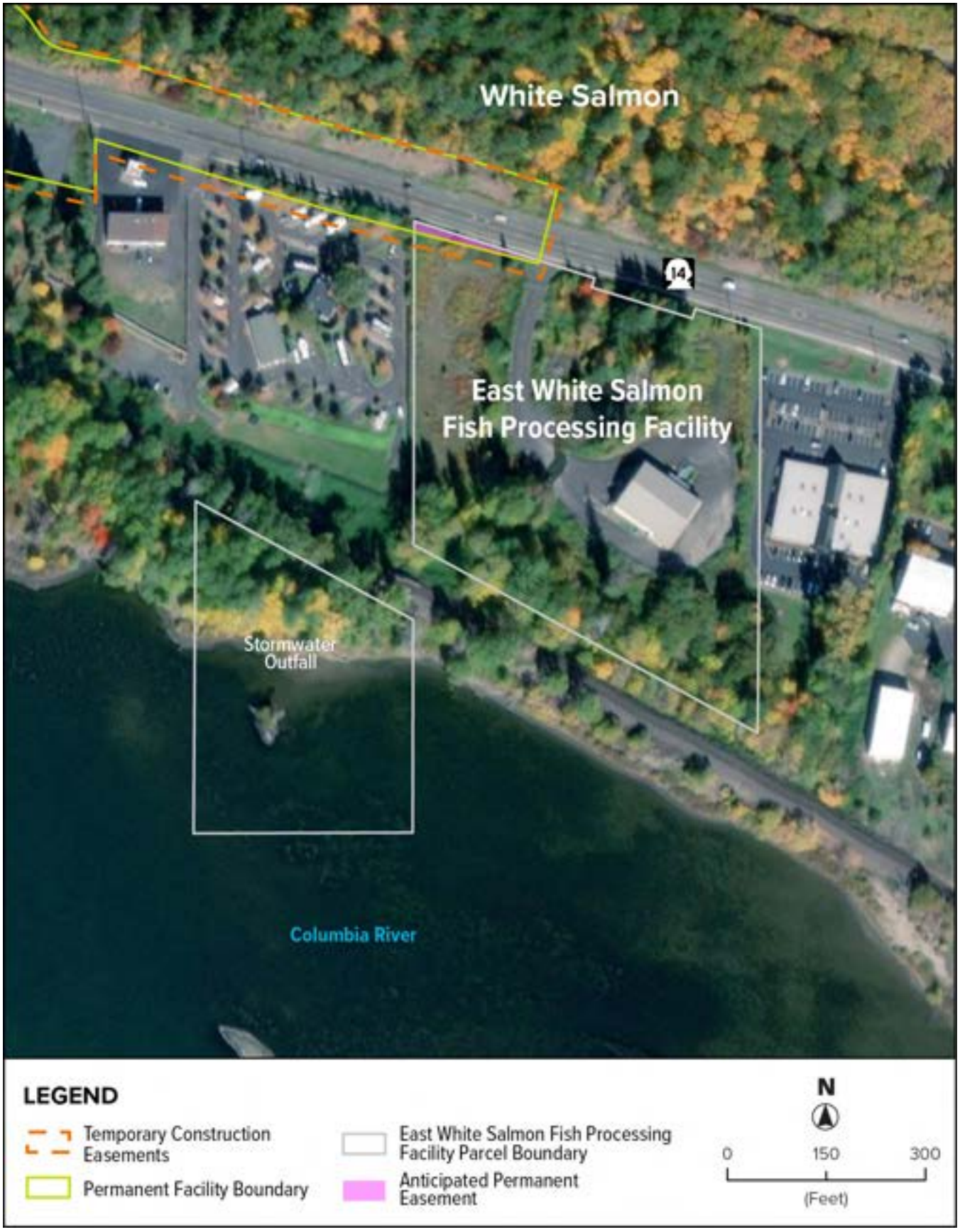


Exhibit 3-20. Impacts to East White Salmon Fish Processing Facility under Alternative EC-3



Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to treaty fishing and processing sites:

- Coordinate temporary changes in roadway and river access to the White Salmon TFAS and East White Salmon Fish Processing Facility with the U.S. BIA, CRITFC, and the Columbia River treaty tribes in advance of construction activities.
- Maintain access for vessel passage to and from the White Salmon TFAS docks, including sedimentation resulting from the Project that encroaches into the dock access channel.
- Continue coordination with CRITFC and the Columbia River treaty tribes during Project construction, providing Project updates and potential impacts to nearby treaty fishing and processing sites and fishing activities on the Columbia River.
- Coordinate with USACE, Bonneville Power Administration, and CRITFC to raise or lower Bonneville Pool level to minimize impacts to fisheries and tribal fishing during construction.

Long-Term Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate long-term impacts to treaty fishing and processing sites:

- Provide signage and fencing (or other barrier) to reduce unauthorized access by non-tribal members to the White Salmon TFAS.
- Coordinate with BIA and CRITFC to identify and install screening along a portion of the west side of the bridge to minimize views into and discourage throwing garbage onto the White Salmon TFAS.
- Consult with Columbia River treaty tribes on pier design regarding tying up boats and gill nets.
- Grant of Easement for Right-of-Way across lands under the jurisdiction of the BIA will be consistent with the Act of February 5, 1948 (25 United States Code [U.S.C.] §§ 323-328) or the Indian Land Consolidation Act (25 U.S.C. § 2218 Sec. 219).

Additional mitigation measures for construction and long-term impacts to access, water quality, vegetation, fish and wildlife, air quality, visual quality, and noise can be found in their respective sections of the EIS (Section 3.1, Traffic Operations; Section 3.7, Waterways and Water Quality; Section 3.16, Vegetation and Wetlands; Section 3.17, Fish and Wildlife; Section 3.18, Air Quality and Greenhouse Gases; Section 3.19, Visual; and Section 3.20, Noise and Vibration).

Additional detail on treaty fishing rights, fishing access sites, and fish processing facilities is provided in the Land Use Technical Report (Appendix I) and Social and Economic Technical Report (Appendix M).

3.6. Geology and Soils

Existing Conditions

Talus slope above SR 14 and N. Dock Grade Road.

Geology in the API consists of a stratigraphy of volcanic and basalt rock formations overlain by an unstable, saturated soil layer that is susceptible to mass movement. Alluvial deposits are abundant and characterized by silty soils with gravel on top of deeper gravel layers (Washington) and sandy, ashy outwash and sand fill (Oregon).

Geologic hazards include the talus slopes north of the Columbia River that are at high risk of movement from disturbance, and the Oregon side is susceptible to liquefaction and ground motion amplification during a large earthquake. The risk of other geologic hazards including landslides, lahars from volcanic eruptions, or seismic hazards on the north side are considered low to moderate.

Project Impacts and Benefits

No Action Alternative

The existing bridge does not meet current seismic design standards and the Oregon side is underlain by liquefiable soils. If a catastrophic geologic event occurs such as an earthquake, landslide, or lahar flows from a Mt. Hood volcanic event prior to the close of the bridge in 2045, direct impacts could include bridge damage or failure and premature bridge closure. Vehicles would no longer be able to use the bridge sending them on circuitous routes and the bridge lift could be stuck or inoperable following a catastrophic event preventing some vessels from passing. Because there would be no ground disturbance under the No Action Alternative, no indirect impacts to soils or geology would result and the risk from geologic hazards would not substantially increase.

Build Alternatives

Construction-related activities from the build alternatives would include the placement of bridge foundations (piers and abutments), clearing and grading for intersection improvements and bridge approaches, construction of retaining walls, and fill placement. Construction impacts from Alternative EC-2 would include tree removal on the north side of the river from bridge construction resulting in an increased risk of erosion and possible offsite transport of sediment-laden stormwater. Oregon side construction would realign the bridge approach slightly to the west requiring vegetation removal, grading, and fill placement. For both Alternative EC-2 and Alternative EC-3, in-water work would include the construction of 12 in-water piers with depths ranging from 18 feet to 139 feet below the mudline depending on bedrock depth. Construction impacts for Alternative EC-3 would be similar to those for Alternative EC-2 with slightly less land surface disturbed (10.9 acres versus 9.1 acres).

Soils on the Oregon side have a high risk of liquefaction and ground motion amplification from a large magnitude earthquake, and soils on the Washington side have a low to moderate risk of liquefaction and ground motion amplification (Exhibit 3-21). A benefit of the build alternatives as compared with the No Action Alternative is that the bridge would be designed to be seismically sound under a 1,000-year event and remain operational under a Cascadia Subduction Zone earthquake.

No indirect geology or soils impacts were identified for the build alternatives. Exhibit 3-22 summarizes geology and soil impacts by alternative.

Exhibit 3-21. Slope Stability and Liquefaction Areas in the Project Area

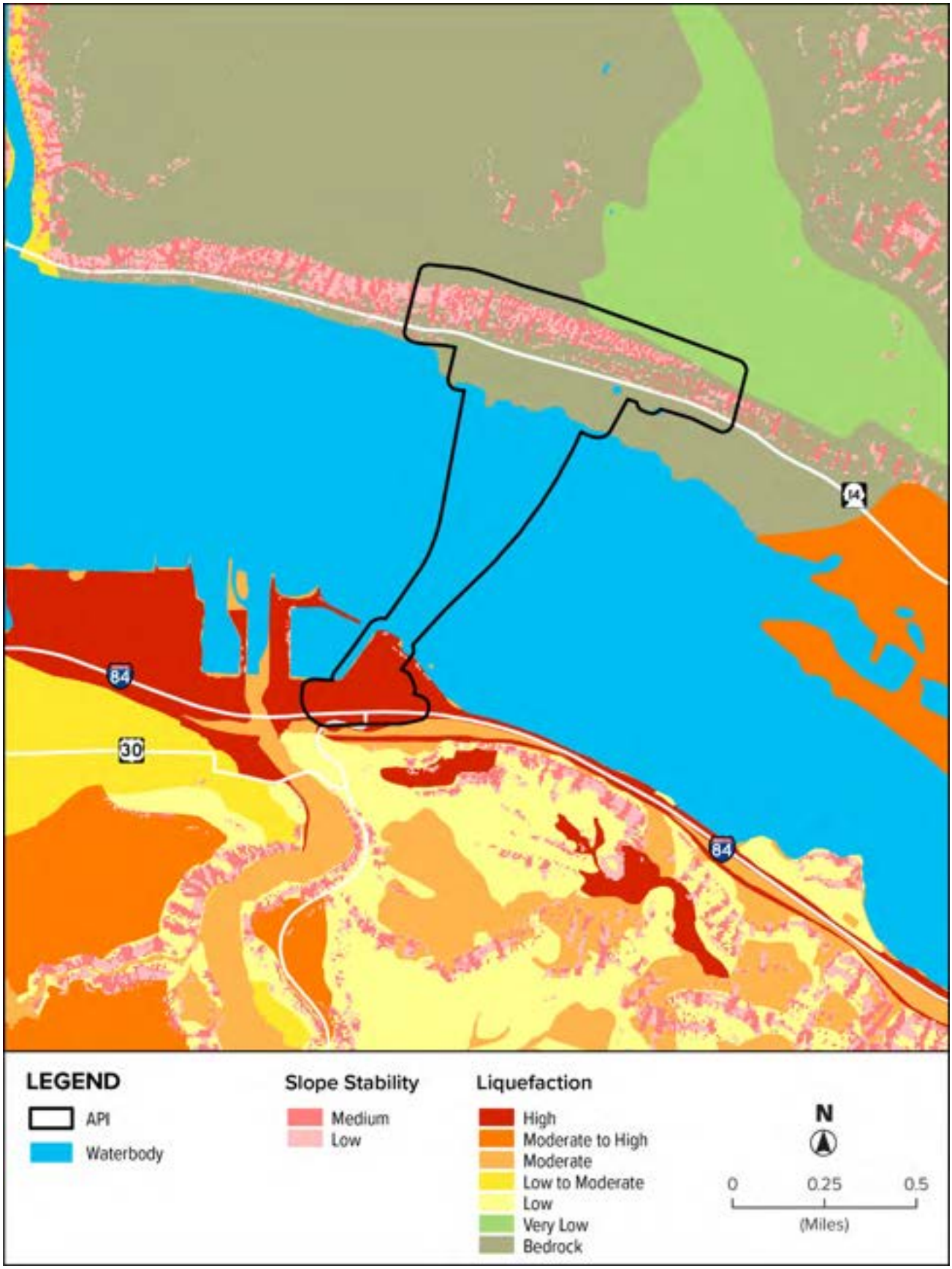


Exhibit 3-22. Summary of Impacts to Geology and Soil Resources

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Construction Impacts	• None	• 10.9 acres of ground disturbance (8.4 acres in WA, 2.5 acres in OR) • 13 piers (12 in-water and 1 on land) and 2 abutments • Low risk rockfall and slope instability	• 9.1 acres of ground disturbance (7.4 in WA, 1.7 in OR) • 13 piers (12 in-water and 1 on land) and 2 abutments • Low risk rockfall and slope instability
Direct Benefits	• None	• Designed for seismic resiliency	
Indirect Impacts	• None		

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to/from geology and soil resources:

- Minimizing the amount of vegetation removal on the Washington side of the Project. (The amount of vegetation removal on the Oregon side of the Project would be minimal due to existing developed or paved areas.)
- BMPs appropriate to the context would be developed for the Project prior to construction. These BMPs would take into account the practices set forth in ODOT and WSDOT regulations and guidance documents including ODOT standard specification Section 00280 (Erosion and Sediment Control) and WSDOT standard specification Section 8.01 (Erosion Control and Water Pollution Control); these BMPs would be implemented during construction to prevent the erosion of exposed soils and eliminate the off-site transport of sediment laden stormwater.
- Performing site stabilization and restoration such as replanting and reseeding for those areas of exposed soils that are no longer under active construction.

Long-Term Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate long-term impacts to/from geology and soil resources:

- Designing the bridge foundations following the most current version of the AASHTO load and resistance factor design bridge design specifications.
- Excavating unsuitable and/or liquefiable soils beyond the footprint of each embankment and replace with engineered fill as necessary.
- Design the bridge to withstand anticipated ground shaking associated with a 1,000-year seismic event and remain operable following ground shaking associated with a 500-year Cascadia Subduction Zone event.
- Designing and constructing stormwater treatment facilities in accordance with applicable stormwater regulations in Oregon and/or Washington that would collect, treat, and disperse stormwater runoff from the bridge so runoff would not create an erosion hazard.

Additional detail on geology and soil resources is provided in the Geology and Soils Technical Report (Appendix F).

3.7. Waterways and Water Quality

Existing Conditions

Main stem of the Columbia River, looking upstream.

The Hood River Bridge crosses the main stem of the Columbia River. On the west side of the bridge, the river's vegetated riparian corridor extends north approximately 450 feet from the river's shoreline to SR 14 and approximately 270 feet on its east side to the BNSF Railway tracks. On the Oregon side, the riparian corridor has been heavily modified by development including marina construction, river bank armoring, and construction of beaches and jetties and retains little or no natural habitat.

The Columbia River and the Hood River, which enters the Columbia River downstream of the bridge, have water quality impairments and are 303(d)-listed for dissolved gases and dioxin (Columbia River) and heavy metals and temperature (Hood River). Both rivers are subject to Total Maximum Daily Load limits. Columbia River hydrology in the API is influenced by the Bonneville Dam and inflow from the Hood and White Salmon rivers. There is little floodplain adjacent to this section of the Columbia River due to the dam controlled environment. Benthic substrates consist largely of silts and medium-to-coarse alluvial sands typical of this reach of the Lower Columbia River.

The 100-year floodplain elevation at the Project site is approximately +90.4 feet (North American Vertical Datum 1988). The river has been largely isolated from its historic floodplain, and hydrology is controlled by dams upstream and downstream of the project site.

Soils on the Washington side were formed from the basalt cliffs above and are moderately deep and well-drained, with moderate runoff potential. Very little fill is present on the Washington side. Soils on the Oregon side of the Project are alluvial deposits from Hood River, are generally well drained, but have been heavily modified by fill for development.

On the Washington side, usable groundwater comes from wells in basalt formations more than 400 feet deep. Shallow wells have static water levels ranging from 22 feet to 42 feet deep. Shallow wells on the Oregon side terminate at depths less than 30 feet and have water levels ranging from 5 feet to 15 feet deep.

The USACE manages water levels, the federal navigation channel, and levees along the Columbia River. The existing bridge crosses over the navigation channel on the Columbia River, which extends 83.2 miles from Vancouver, Washington, to The Dalles, Oregon. This section includes a shallow draft navigation channel and pile dike structures that stabilize the channel. The 300-foot-wide navigation channel is authorized to be 27 feet deep, but is currently maintained to a 17-foot depth, which is considered adequate for current users (primarily tug and barge traffic). Actual water depths at the Project location are much deeper ranging from approximately 35 feet to 50 feet deep according to USACE hydrographic surveys (USACE 2020). USACE also has property rights along the shoreline in the form of restrictive easements providing for the continued operation and maintenance of the reservoir behind Bonneville Dam. Development activities within these areas must be consistent with the language of the specific agreement and/or requires review and approval by the USACE. Two levees are located in the general vicinity of the Project, but outside the API; these include a levee on the Washington side of the river located approximately 2 miles upstream from the Project near the City of Bingen and an embankment located along Hood River before it enters the Columbia River upstream from the Port's Marina.

Project Impacts and Benefits

No Action Alternative

Direct impacts to water quality under the No Action Alternative would include the continued discharge of untreated stormwater and hazardous materials such as petroleum from the regular use of vehicles and unforeseen spills. Pollution would enter the river through the open deck grate and be conveyed by the approaching roadways to the north and south. If a catastrophic event occurs such as an earthquake, landslide, or barge or vessel strike, the bridge could be damaged or collapse into the river. Direct impacts from a catastrophe could include release of hazardous materials such as lead-based paint chips from the bridge, asbestos and hydraulic fluids entering the water from bridge infrastructure, as well as the potential that all or part of the bridge superstructure could fall into the Columbia River. There would be no indirect

improvements to waterway function and navigation from reduction of the number of in-water piers if the existing bridge remains in place.

Build Alternatives

With each of the build alternatives, water quality impacts and benefits would result from removal of the existing bridge and operation of the replacement bridge. There would be no substantial hydraulic impacts from bridge construction or removal.

During construction, impacts to water quality could occur from installing piles and footings or accidental spills of materials or chemicals. Pile or footing installation methods would include waterline footings or cofferdams. Turbidity plumes resulting from the placement of piles or cofferdams are expected to be discrete, temporary, and are not expected to require mitigation. If waterline footings are used, there would also be a risk of accidental spills from poured concrete and drilling slurry or the risk of hydroacoustic impacts depending on whether the piles are drilled or driven. If cofferdam construction is used for footings, local turbidity would increase temporarily during the placement of sheet piles and pipe piles. Spills could also result from concrete poured to connect bridge segments that could impact local pH or from small quantities of fuels (including diesel, gasoline, and propane) for various pieces of small equipment that would likely be stored at the construction staging site. Removal of the existing bridge could result in similar temporary water quality impacts through pier removal and riverbed disturbance. Removal and dismantle of the existing bridge deck could result in materials, such as lead paint and asbestos, entering the water.

Although the build alternatives would increase the amount of impervious surface associated with the bridge deck and roadway improvements compared with the No Action Alternative, stormwater runoff would be treated, resulting in improved water quality. Alternative EC-2 would result in 22.88 acres of impervious surface and Alternative EC-3 would have 22.80 acres compared to 17.77 acres for the exiting bridge. The build alternatives would substantially reduce pollutant discharge compared to the existing steel grated bridge that has no water quality treatment. If left in place, the existing bridge would generate 5,386 lbs. of untreated total suspended solids (TSS) annually to the Columbia River compared to 254 lbs. for Alternative EC-2 and 263 lbs. for Alternative EC-3. The build alternatives would each contribute approximately 1 lb. of copper and 7 lbs. of zinc per year with the No Action Alternative generating slightly more. Both build alternatives would involve work in the floodplain. The Project would represent a small improvement to floodplain and hydrodynamic function at the site as a result of the removal of approximately 5,267 cubic yards of material below the 100-year floodplain elevation in Alternative EC-2 and Alternative EC-3.

Indirect impacts from the build alternatives as compared to the No Action Alternative would include a net decrease in the number of piers, thereby improving waterway function and river navigation. The build alternatives would also prevent direct spills of hazardous materials from the bridge deck into the river because the new deck would be solid and continuous, and any spills would be directed to the stormwater treatment systems near both bridge abutments.

Exhibit 3-23 summarizes waterways and water quality impacts by alternative.

Exhibit 3-23. Summary of Impacts to Waterways and Water Quality Resources

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Construction Impacts	• No in-water work required	• Requires in-water work • 12 new in-water piers • Potential for hazardous material spills to water or ground	• Requires in-water work • 12 new in-water piers • Potential for hazardous material spills to water or ground
Direct Impacts	• Highest pollutant loading (5,386 lbs. TSS, 1.2 lbs. of copper, and 7.5 lbs. of zinc per year) • 17.77 acres of impervious surface	• Less pollutant loading than the No Action Alternative- (254 lbs. TSS, 1.1 lbs. copper, 7.0 lbs. zinc per year) • 22.88 acres of impervious surface	• Less pollutant loading than the No Action Alternative - (263 lbs. TSS, 1.0 lbs. copper, 6.7 lbs. zinc per year) • 22.80 acres of impervious surface
Indirect Impacts	• Continued risk of spills discharging to the Columbia River	• Minimize risk of spills occurring on the bridge from discharging into the Columbia River	

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to waterways and water quality resources:

- A mixing zone for turbidity is authorized in Washington Administrative Code 173.20 IA-030 during and immediately after necessary in-water or shoreline construction activities that result in the disturbance of in-place sediments. The turbidity requirement for Oregon would be determined as part of the Water Quality Certification for in-water work from Oregon DEQ. Use of a turbidity mixing zone is intended for brief periods of time (such as a few hours or days) and is not an authorization to exceed the turbidity standard for the entire duration of the Project. For waters above 100 cfs flow at the time of construction, the point of compliance is 300 feet downstream of Project activities.
- To avoid fish exposure to increased pH, all in-water concrete pours would be isolated and allowed to cure for a minimum of 7 days.
- If drilled piles are used, the resulting contaminated water removed during the concrete pour would be treated to regulatory standards prior to release. Treatment commonly employs detention and treatment tanks. The associated BMPs would be set up in advance and are included in WSDOT Standard Specification Section 8-01 “Erosion Control and Water Pollution Control” and ODOT Special Provision 00290.30(a)(7) “Water Quality.” Wash-water from concrete delivery trucks, pumping equipment, and tools would also be similarly (impervious basins) contained.
- Equipment entering state waters (including barges, boats, cranes, etc.) would be maintained to prevent any visible sheen from petroleum products from appearing on the water's surface. No oil, fuel, or chemicals would be intentionally discharged into the Columbia River. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc. would be checked regularly for drips or leaks; they would be maintained to prevent spills. Concentrated waste or spilled chemicals would be removed from the site and disposed of at a facility approved by Ecology, Oregon DEQ, or the appropriate county health department.
- Spills into the Columbia River, or onto land, with a potential to enter the water would be reported immediately to relevant agencies including U.S. EPA, USCG, Oregon DEQ, and Ecology. Emergency spill control equipment would be on-site at all times. If a spill occurs, containment and clean-up efforts would begin immediately and be completed as soon as possible, taking precedence over normal work. Paint and solvent spills should be considered as oil spills and thus prevented from entering the Columbia River.
- Conduct pre-removal surveys for asbestos, polychlorinated biphenyls (PCBs), and lead for the existing bridge and all other structures to be removed. If necessary, proceed with removal and disposal in accordance with regulations prior to removal of the existing bridge. Prepare pollution prevention plans and hazardous materials containment plans in accordance with WSDOT Standard Specification Section 1-07.15(1) “Spill Prevention, Control and Countermeasures Plan” and ODOT Standard Specification Section 00290.20(g) “Spills and Releases” and Section 00290.30 “Pollution Control.”
- During the construction of the SR 14/bridge approach road intersection, all erosion and stormwater control measures would either meet or exceed WSDOT's Highway Runoff Manual requirements and be used along with other required erosion management techniques established for road construction in the Temporary Erosion and Sediment Control Plan (ESCP).
- Throughout the construction process, the development and implementation of a construction stormwater runoff monitoring plan would provide information on the effectiveness of mitigation measures. Monitoring would, at a minimum, consist of turbidity and suspended solids testing in outfall from stormwater collection ponds, construction de-watering settling basins, and down river just beyond mixing zones. Routine inspections of all sediment control and erosion prevention measures would be included in regular monitoring.

Long-Term Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate long-term impacts to waterways and water quality resources:

- Newly constructed stormwater management for the Project would employ BMPs at both ends of the bridge prior to discharge into the Columbia River.
- Post-construction maintenance and monitoring to document maintenance activities could be undertaken to ensure that stormwater collection systems are functioning properly and that water quality standards are being met.
- During final design, avoid or minimize impacts to the Port's existing marina facilities.

Additional detail on waterways and water quality resources is provided in the Waterways and Water Quality Technical Report (Appendix Q).

3.8. Community and Social Resources

Existing Conditions

There are a variety of community and social resources in the API, including places of worship, museums, public services, healthcare providers, libraries and schools, parks, and recreation facilities as shown in Exhibit 3-24. In addition, the White Salmon TFAS and East White Salmon Fish Processing Facility in the API are used regularly by tribal members with treaty fishing rights. (See Section 3.5, Treaty Fishing Rights, for additional information.)

Agencies, schools, non-profits, and churches provide community resources in the API.

The cities of Bingen, White Salmon, and Hood River are socially and economically diverse communities with concentrated areas of different population groups within each city. On both sides of the river near the existing bridge there are higher concentrations of Hispanic/Latino populations and residents that speak Spanish with limited English proficiency. In addition, there are higher concentrations of elderly residents near the existing bridge compared with Klickitat County overall. Higher concentrations of minority and low-income populations are present on the Oregon side near the bridge, compared with Hood River County.

As noted in Section 3.4, Land Use, the Hood River Bridge provides an integral link between communities on opposite sides of the Columbia River. The existing bridge provides the communities and businesses on both sides of the river with access to a greater number of services (including retail businesses, industrial operations, and recreation and tourism activities); a shared workforce; and access to alternate transportation routes including I-84, SR 14, and OR 35, which are particularly important in emergency situations.

Project Impacts and Benefits

No Action Alternative

Under the No Action Alternative, the existing Hood River Bridge would continue to operate in its existing condition and configuration and toll rates would likely increase over time at a rate similar to past increases, so there would be minimal direct impacts to community and social resources. At such a time in the future that the existing bridge would exceed its operational life or a catastrophic event would occur causing the bridge to close, residents, businesses, freight, emergency responders, and tourists would have to take lengthy detours to cross the Columbia River (Exhibit 3-9). Populations and businesses on the Oregon side would still have connections to I-84; however, local Washington communities would need to travel over 20 miles to alternate bridge crossings to reach I-84. Some Washington residents would likely use services found in the City of The Dalles in place of those in the City of Hood River and community cohesion between the cities of Hood River, White Salmon, and Bingen would be reduced. Given the 20-mile detour to an alternative bridge crossing, it would be likely that cross-river transit service would be eliminated if the bridge closed.

Build Alternatives

During construction of either of the build alternatives, short-term impacts to social and community resources would involve traffic disruptions, noise, vibration, and dust; however, these impacts would be temporary and are not expected to adversely affect community cohesion or population growth because cross-river travel would remain open and access to businesses and local streets would be maintained.

Exhibit 3-24. Community Resources in the API

PLACES OF WORSHIP AND CEMETERIES
1. Saint Joseph's Church
2. Bethel Congregational United Church of Christ
3. United Methodist Church
4. White Salmon Seventh-Day Adventist Church
5. New Beginnings Church
6. Church of the Nazarene
7. House of Grace
8. Our Savior Lutheran Church
9. First Baptist Church
10. Kingdom Hall of Jehovah's Witnesses
11. The Church of Jesus Chris of Latter-Day Saints
12. Hood River Seventh-Day Adventist Church
13. Saint Mark the Evangelist Church Columbarium
14. St. Marks Episcopal Church
15. Immanuel Lutheran Church
16. Vineyard Christian Fellowship
17. Riverside Community Church
18. Young Life-Hood River Valley

MUSEUMS
19. Gorge Heritage Museum
20. The History Museum of Hood River County

PUBLIC SERVICES
21. Klickitat County Pioneer Center
22. Mt. Adams Transit
23. Hood River Circuit Court
24. Hood River County Building Department

HEALTHCARE PROVIDERS
25. Northshore Medical Group
26. Skyline Hospital
27. Comprehensive Health Care

LIBRARIES AND SCHOOLS
28. White Salmon Valley Community Library
29. Hood River County Library
30. Whitson Elementary School
31. White Salmon Valley School District
32. Wildcraft Studio School
33. Little Oak Montessori Elementary School
34. Little Oak Montessori School Children's House
35. Henkle Middle School
36. Wallace & Priscilla Stevenson Intermediate School
37. White Salmon Head Start
38. Hood River County School District
39. May Street Elementary
40. Wilwood Academy

PARKS
41. Bridge RV Park & Campground
42. Firemen's Park
43. Bike Park
44. Pioneer Park Cemetery
45. The Little City Park
46. Rhinegarten Park
47. Port Marina Park
48. Marina Green

TRIBAL FISHING
49. Underwood In-Lieu
50. Nez Perce Property
51. White Salmon TFAS
52. East White Salmon Fish Processing
53. Stanley Rock TFAS

COMMERCIALLY-ZONED AREAS
54. City of White Salmon
55. City of Bingen
56. Downtown Hood River

SOCIAL SERVICES
57. White Salmon Seniors
58. Washington Gorge Action Programs
59. Oregon Human Development Corporation
60. Mid-Columbia Children's Council
61. Providence Dethman House

Long-term, community cohesion would be maintained through the retention of a direct transportation connection across the river and directly enhanced by the new shared use path across the replacement bridge, providing connectivity across the river for non-motorized forms of travel, and additional recreation and scenic viewing opportunities, as listed in Exhibit 3-25. Emergency vehicle response times across the replacement bridge would be improved because other vehicles could move to shoulders, which would facilitate quicker travel for emergency vehicles. Transit times across the replacement bridge would be reduced under both build alternatives because the speed limit of the replacement bridge would be higher than the existing bridge. A safer driving experience would be provided for all forms of motor vehicles crossing the river. No community resources would be displaced under Alternative EC-2; under Alternative EC-3, displacement of The Marketplace would result in displacement of the offices of two non-profit organizations: one that provides services to farmworkers and one that provides education, family, health, nutrition, safety, and transportation services for children.

The new shared use path would increase cross-river pedestrian and bicycle traffic, which in turn could result in the indirect impact of a need for additional improvements to existing pedestrian and bicycle facilities or a need for new facilities over time.

Exhibit 3-25. Summary of Impacts to Social and Community Resources

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Construction Impacts	• None	• Temporary traffic detours, noise, vibration, and dust would cause minor adverse impacts on quality of life	
Community Cohesion	• Reduced cross-river connectivity when bridge is eventually closed	• Cross-river transportation connection retained • Enhanced by addition of shared use path, providing improved bicycle and pedestrian connectivity, additional recreation opportunities, and additional views of Columbia River	
Emergency Response	• Substantial detours required when bridge is eventually closed	• Travel time of emergency response vehicles improved across the river	
Transit	• Cross-river transit likely to be eliminated when bridge is eventually closed	• Improved cross-river transit time	
Vehicle Travel	• Substantial detours required when bridge is eventually closed	• Safer driving experience across bridge with wider travel lanes and shoulders for disabled vehicles and increased speed limit	
Residential or Community Resource Displacements	• None	• None	• Two non-profit organizations that provide community resources

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to social and community resources:

- Send English and Spanish notices, flyers, email blasts, and/or social media posts to residents, businesses, Project stakeholders, schools, churches, emergency services, law enforcement, community service organizations, community facilities, service providers, recreation outfitters, and local media in advance of construction activities to provide information about upcoming construction activities and schedule, detour routes, and temporary utility service disruptions, if any.
- Coordinate temporary changes in access to the White Salmon TFAS with the U.S. BIA, CRITFC, and the four treaty tribes in advance of construction activities.
- Provide signed detours for pedestrians and bicyclists that use any trails or sidewalks near the construction activities.
- Install variable message signs in advance of construction activities to allow travelers to plan alternate routes.
- Where construction work zones would alter existing pedestrian facilities, confirm that ADA-compliant alternate routes and detour signage are provided.

Long-Term Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate long-term impacts to social and community resources:

- Ensure that newly constructed pedestrian facilities associated with the Project are ADA-compliant to provide connectivity between the communities and businesses, employers, and other destination points.
- All acquisition of real property required for the construction of the replacement bridge would comply with the requirements of the federal Uniform Act, the Washington Relocation Assistance – Real Property Acquisition Policy (RCW 8.26), or the Oregon Relocation of Displaced Persons statutes (ORS 35.500 – 35.530).

Additional detail on social and community resources is provided in the Social and Economic Technical Report (Appendix M).

3.9. Environmental Justice Populations

Existing Conditions

Current tolls are collected at both a toll booth and electronically. Tolls are $2.00 cash or $1.00 electronically for passenger vehicles.

The environmental justice populations in the API include low-income households, minorities, and Hispanic/Latino populations that reside within the API and the Native Americans who travel to and use the White Salmon TFAS and East White Salmon Fish Processing Facility. The proportion of low-income households, minorities, and Hispanic/Latino populations within the API are higher than county averages; and, these populations are more highly concentrated in the cities near the bridge: Bingen and White Salmon, Washington, and Hood River, Oregon. The 2010 U.S. Census data and American Community Survey estimates (2013-2017) indicate a greater proportion of racial minorities living south and east of the bridge in the City of Hood River (Exhibit 3-26). As shown in Exhibit 3-27, Hispanic/Latino populations reside on both sides of the Columbia River, with concentrations in the City of Bingen, downtown White Salmon, and areas west and east of the bridge connection in the City of Hood River. There are no permanent residences within 0.38 miles from the bridge touchdown in the City of Hood River or 0.25 miles of the bridge touchdown in Washington; however, seasonal and temporary camping by tribal members commonly occurs at the White Salmon TFAS. The average proportion of low-income households in Klickitat County is 13.4 percent, whereas the proportion of low-income households in Bingen is 18.8 percent. Hood River County has a lower average of low-income households (8.6), but most of the areas directly surrounding the City of Hood River's downtown core have averages of low-income households ranging from 10.0 percent to 23.7 percent (Exhibit 3-28).

The following section evaluates whether the alternatives would result in any disproportionately high and adverse impacts to environmental justice populations.

Project Impacts and Benefits

No Action Alternative

Under the No Action Alternative, maintenance costs would be expected to increase as the bridge ages, which could substantially influence toll rates. Increases in tolls would have an adverse direct impact to environmental justice populations, which could result in a financial burden on low-income households. The exception is for members of the four tribes with treaty fishing rights on the Columbia River, who are exempted from paying tolls.

Indirect effects associated with the No Action Alternative would be the eventual closure of the existing bridge at such a time that it exceeds its operational life or a catastrophic event occurs. Resulting effects from this closure would include increased time and cost for those that depend on it to reach jobs or services, including environmental justice populations. If using an alternate crossing would be too costly or time-consuming for individuals, they could need to seek other employment or services.

Closure of the bridge would sever the route frequently used by tribal fishers that access the Columbia River from the Stanley Rock TFAS, White Salmon TFAS, Underwood In-Lieu site, and East White Salmon Fish Processing Facility. Using an alternate crossing would have a substantial impact on these fishers' travel time and cost.

Some Hispanic/Latino extended families live on both sides of the Columbia River; thus, short- and long-term closures of the bridge would disrupt travel for family gatherings, including traditional Sunday family dinners. Additionally, St. Mary's Catholic Church and the Mercado Guadalajara (Mexican grocery store) are located in the City of Hood River; travel to these locations by Hispanics/Latinos would also be disrupted. If closure of the bridge would impact local businesses and their associated jobs, as described in Section3.10, Local and Regional Economies, this could require all employees of these businesses, including environmental justice individuals, to seek new employment opportunities.

Exhibit 3-26. Minority Populations in the API Relative to County Averages

Exhibit 3-27. Hispanic/Latino Populations in the API Relative to County Averages

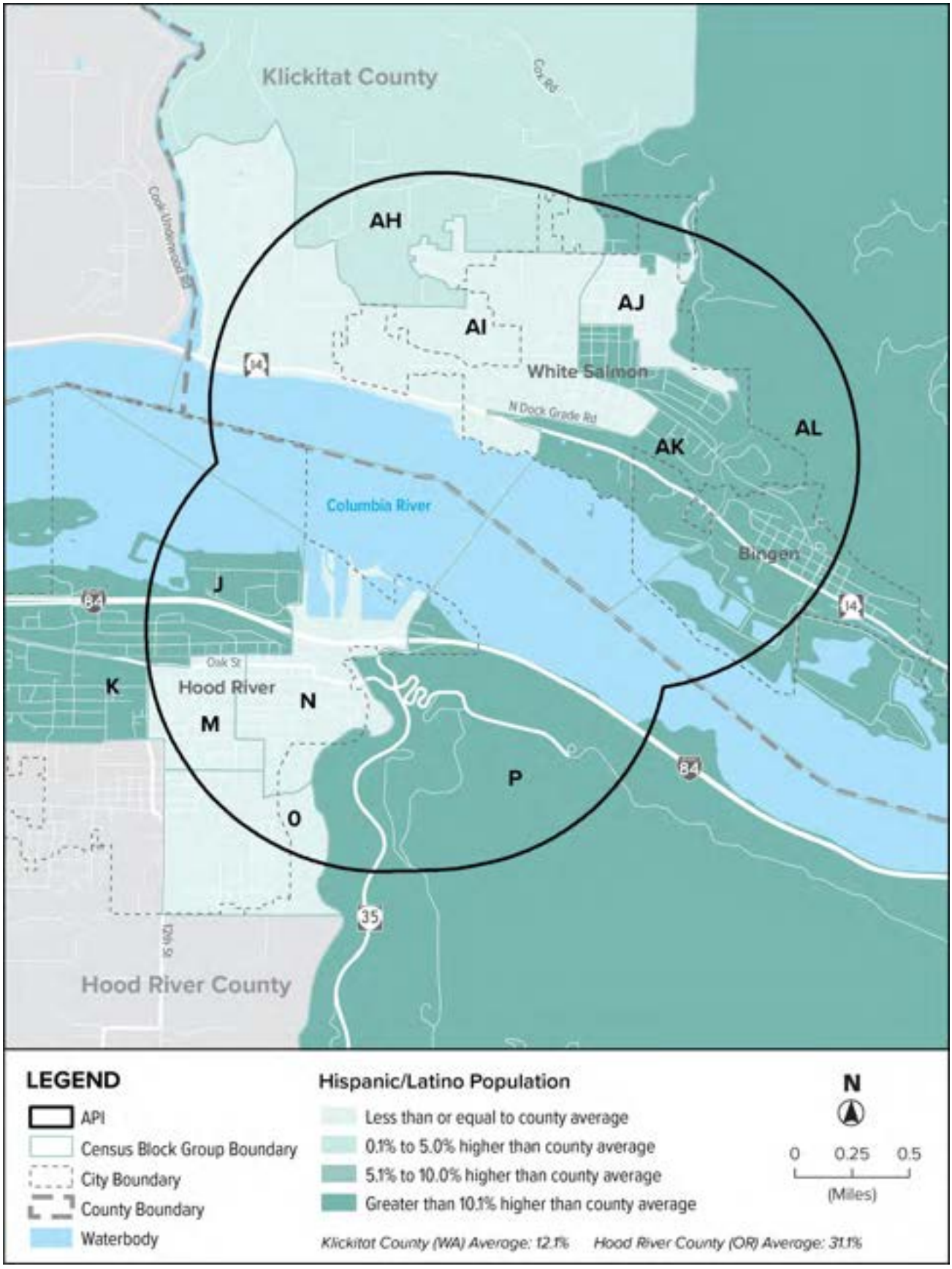
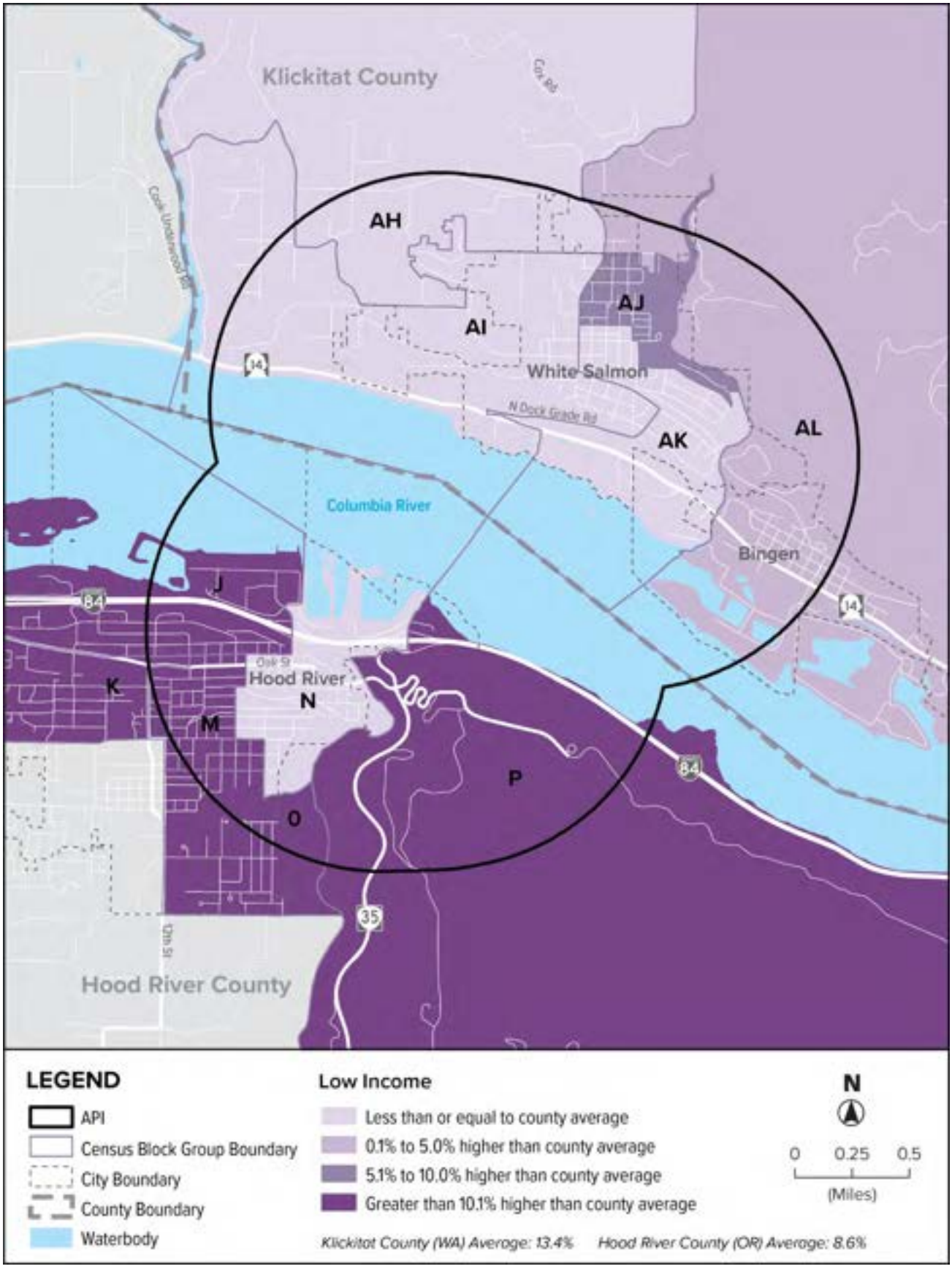


Exhibit 3-28. Low Income Households in the API Relative to County Averages



Build Alternatives

As listed in Exhibit 3-29, construction of the build alternatives would result in temporary changes in travel patterns, access, noise, and air quality. Tribal members camping at the White Salmon TFAS or fishing near construction activities would experience the greatest level of construction-related noise, dust, vehicle travel delays and detours, and vessel navigation and fishing around construction activities and equipment compared to other populations, particularly under Alternative EC-2 given its proximity to the White Salmon TFAS (see Section 3.5, Treating Fishing Rights, for additional detail). Alternative EC-3 would displace two non-profit organizations (Oregon Human Development Corporation and Mid-Columbia Children's Council) located at The Marketplace in the City of Hood River that provide services to Oregon low-income and minority individuals living in the region. As described in Section 3.8, Community and Social Resources, depending on if and where these offices relocate, access to these services and getting to these offices could change.

Under both build alternatives, low-income households or those without vehicles could directly benefit from improved transit times crossing the bridge and the new shared use path on the bridge, which would provide an alternate non-tolled means of crossing. The shared use path could, however, result in additional pedestrian and bicycle traffic near the White Salmon TFAS, potentially leading to unauthorized access to this site. In addition, Alternative EC-2 would require several easements on the property where the White Salmon TFAS is located: a temporary construction easement, a permanent easement for one bridge pier located on the submerged portion of the parcel, and a permanent aerial easement for the bridge to span over the east side of the parcel. Alternative EC-3 would require a permanent easement along SR 14 on the north side of the East White Salmon Fish Processing Facility but would not change the function of this site. As shown on Exhibit 3-19 and Exhibit 3-20 in Section 3.5, Treaty Fishing Rights, the size and location of the easements are such that they are not anticipated to impact the land-based activities at either site. These easements would not change long-term physical access to the site and would likely not change the overall function of the site, however, potential impacts are subject to ongoing tribal consultation. Additional impacts to the White Salmon TFAS and East White Salmon Fish Processing Facility could include air and dust emissions, noise and vibration, over-water structure/in-water shading, and loss in benthic habitat. These impacts are identified and explored in more detail in Section 3.5, Treaty Fishing Rights.

Under the No Action Alternative, increased maintenance costs could substantially influence toll rates. The toll rate structure for the build alternatives would likely be influenced by the level of repayment needed for funding construction of the bridge; thus, tolls could be higher under the build alternatives compared to tolls under the No Action Alternative that supports maintenance and a replacement bridge fund. Therefore, low-income households could experience higher adverse effects as a result of tolling under the build alternatives compared to the No Action Alternative. In addition, an ETC system could be a barrier to people that could have limited English proficiency, use only cash, are unable to navigate the internet, or feel uncomfortable vising the Port office in-person. Toll rate increases would not affect members of the Yakama Nation, as these individuals would continue to be exempted from toll collection in compliance with the agreement between the Port and the Yakama Nation.

No indirect impacts to environmental justice populations would be expected under the build alternatives.

Exhibit 3-29 Summary of Impacts to Environmental Justice Populations

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Construction Impacts to Treaty Fishing Sites and Fish Processing Facility *See Exhibit 3-18 in Section 3.5, Treaty Fishing Rights, for additional details*	• None	• White Salmon TFAS: 0.4-acre temporary construction easements; air and dust emissions, noise, underwater noise, vibration, turbidity and sediment, temporary limitations to nearshore fishing areas, traffic congestion and delays, and detours to the site; increased safety issues due to in-water obstacles for fishers to maneuver around • East White Salmon Fish Processing Facility: No temporary construction easement; air and dust emissions, noise, traffic congestion and delays, and detours to the site	• White Salmon TFAS: 0.03-acre temporary construction easements; air and dust emissions, noise, underwater noise, vibration, turbidity and sediment, temporary limitations to nearshore fishing areas, traffic congestion and delays, and detours to the site; increased safety issues due to in-water obstacles for fishers to maneuver around • East White Salmon Fish Processing Facility: 0.1-acre temporary construction easement; air and dust emissions, noise, traffic congestion and delays, and detours to the site
		• Underwood In-Lieu Site, Stanley Rock TFAS, and Nez Perce Tribe Property: Minor traffic congestion, delays, and detours to the sites	
Cross-River Accessibility	• Eventual bridge closure would require long and costly detours	• New means of crossing for pedestrians and bicyclists • Improvement in cross-river transit times	
Bridge Tolls	• Increase in vehicle toll rate could create a financial burden for low-income households, potentially a higher burden under the build alternatives • Accessibility barriers potentially created by all electronic toll system		
Direct Impacts to Treaty Fishing Sites and Fish Processing Facility *See Exhibit 3-18 in Section 3.5, Treaty Fishing Rights, for additional details*	• Eventual bridge closure would require tribal fishers to use an alternate crossing to access sites	• White Salmon TFAS: Permanent easement for one bridge pier (0.3 acre), and aerial easement; potential for increase in unauthorized use • East White Salmon Fish Processing Facility: No permanent easement	• White Salmon TFAS: No permanent or aerial easement; potential for increase in unauthorized use • East White Salmon Fish Processing Facility: 0.04 acre of permanent easement for road improvements to SR 14
		• No direct impacts to the Underwood In-Lieu Site, Stanley Rock TFAS, and Nez Perce Tribe Property	
Displacement of Services	• None	• None	• Displacement and potential relocation of 2 non-profits that serve low-income and minority individuals
Environmental Justice Determination	• Not applicable	• Disproportionately high and adverse impacts to low-income and minority populations	

Environmental Justice Finding

Impacts to low-income populations would occur if tolling rates were increased under the No Action Alternative or increased to a higher rate under both build alternatives. The proportion of low-income households in the API ranges from 10 percent to 24 percent in most of the block groups. These percentages exceed the percentages of households in the respective counties in most cases. Similarly, there are higher proportions of minorities and Hispanic/Latino populations than county averages.

In addition, the White Salmon TFAS and East White Salmon Fish Processing Facility are accessible to members of the Columbia River treaty tribes; these sites are located near the existing bridge on the Washington shore. These sites draw Native Americans to the API, including many who travel across the Hood River Bridge to fish at the White Salmon TFAS, Underwood In-Lieu site, and Stanley Rock TFAS as well as use the East White Salmon Fish Processing Facility. Construction-related impacts to the TFAS would include dust, noise and vibration, temporary restriction to nearshore fishing areas, and temporary detours to access the site, particularly for any tribal members camping at the site. Long-term impacts could include increased visibility of the TFAS from the shared use path and closer proximity of people walking or biking near the TFAS fenced boundary. Additionally, CRITFC has also identified that new pedestrian and bicycle facilities could increase unauthorized access to the TFAS, visibility of TFAS activities and residents, and garbage thrown from the bridge based on experiences from other TFASs and in-lieu fishing sites along the Columbia River.

Mitigation has been proposed to avoid, minimize, and mitigate construction-related and long-term impacts. The Project, with incorporated mitigation measures, would be expected to have high and adverse disproportionate impacts on low-income and minority populations who reside in the area, receive services at two non-profit organizations that could be displaced, or would travel across the replacement bridge. With mitigation measures to minimize construction-related impacts to tribal members residing, conducting fishing and ceremonial activities at the White Salmon TFAS, and accessing the Columbia River to fish, the Project would be expected to have high and adverse disproportionate impacts on Native Americans, who use the White Salmon TFAS and/or East White Salmon Fish Processing Facility.

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to minority and low-income populations:

- Implement the avoidance, minimization, and/or mitigation commitments for construction impacts identified in Section 3.5, Treaty Fishing Rights, Section 3.8, Community and Social Resources, Section 3.18, Air Quality and Greenhouse Gases, Section 3.19, Visual, Section 3.20, Noise and Vibration, and Section 3.21, Hazardous Materials.
- Consider contract incentives for hiring Native American companies for construction, environmental work, and other services associated with the Project.
- Consult with the tribes with treaty fishing rights and coordinate with BIA and CRITFC about the timing of construction activities, alternate camping sites, and access detours to the White Salmon TFAS and East White Salmon Fish Processing Facility.

Long-Term Impacts

The following measures would be implemented by the bridge owner to address impacts to minority and low-income populations:

- Implement the avoidance, minimization, and/or mitigation commitments for long-term impacts identified in Section 3.5, Treaty Fishing Rights, Section 3.8, Community and Social Resources, and Section 3.19, Visual.
- Ensure that newly constructed pedestrian facilities associated with the Project are ADA-compliant to provide connectivity between the communities and businesses, employers, and other destination points.
- Provide signage and fencing (or other barrier) to reduce unauthorized access by non-tribal members to the White Salmon TFAS.
- Coordinate with BIA and CRITFC to identify and install screening along a portion of the west side of the bridge to minimize views into and discourage throwing garbage onto the White Salmon TFAS.

- Prior to establishing toll rates and account fees for users of the replacement bridge, a robust and inclusive public engagement program and technical evaluation would be undertaken to assess strategies to mitigate any undue financial burden caused by increased toll rates or undue barriers to use the bridge caused by the implementation of an all-electronic toll collection system. The findings from this process would be recommended to the tolling authority as part of its initial toll setting process for the replacement bridge. An initial list of strategies that could be considered as part of this process include, but would not be limited to, the following:
  - Reduced toll rates for low-income populations implemented at the time the replacement bridge is opened.
  - Recycle toll revenues into transportation services that would benefit low-income populations and other bridge users. Toll revenues would be required to first cover the cost of any debt service (and bond covenants), operations, and maintenance costs of the replacement bridge. Excess revenues not required to meet these requirements, if any, could be used for other permitted transportation purposes, such as improved transit service, and carpool programs.
  - Implement measures to mitigate any undue burdens on low-income and minority populations resulting from the need to enroll in ETC programs, such as:
    - For households without convenient access to banks or the internet, supplement the toll payment options to include a variety of payment options, including cash, money orders, and checks that could be conducted at a wide variety of locations, such as convenience stores, gas stations, grocery stores, and other retail locations.
    - For non-English speaking populations, provide Spanish (and other) language translation for printed and electronic tolling informational materials, electronic toll applications, smartphone applications, and billing statements.
    - Provide toll exemptions for pedestrians and bicyclists traveling on the shared use path.
  - Implement measures to mitigate any undue burdens on low-income populations resulting from toll rate increases or other costs of toll accounts, such as:
    - Free or low-cost tolls for use of for qualified vanpools.
    - Waiving or reducing monthly account maintenance fees or account balance requirements for low-income populations.
    - Providing free or low-cost transponders to low income populations.
  - Implement a toll violations policy that allows reasonable opportunities to pay delinquent tolls prior to advancing unpaid tolls to a collection agency or municipal courts.

Additional detail on environmental justice populations is provided in the Social and Economic Technical Report (Appendix M).

3.10. Local and Regional Economies

Existing Conditions

Recreation and tourism has become an important part of the region's economy.

The local and regional economies within the API were built on agricultural and forest product industries. These industries continue to be a focus of economic growth with a recent rise in recreational, tourism, service-oriented, and manufacturing sectors.

For millennia, tribal communities have harvested salmon from the Columbia River for commercial, physical and spiritual sustenance. The salmon were routinely sold to and traded with neighboring tribes, settlers, and explorers. As presented in Section 3.5, Treaty Fishing Rights, the Nez Perce Tribe, CTUIR, Warm Springs, and Yakama Nation signed individual treaties with the U.S. government in 1855 to reserve, forever, their right to fish at all of their usual and accustomed places. The rich custom of tribal fishing continues to be essential to the heritage, culture, and economy of the Indian people and to the Pacific Northwest (CRITFC 2020g). The river zone between the Bonneville and McNary dams (Zone 6, see Exhibit 3-16 in Section 3.5, Treaty Fishing Rights) limits commercial fishing exclusively to members of the four Columbia River treaty tribes; tribal fishers catch and sell fish year-round according to fish run seasons.

The existing Hood River Bridge plays a critical role in the local and regional economy. The economies of Klickitat County and Hood River County can largely be viewed as an integrated regional economy. Although both counties have industrial and commercial enterprises, the region provides a bi-state workforce and access to complimentary businesses that strengthen each county's economy. Logging trucks connect the wood-related industries on either side of the Columbia River, and fruit haulers cross over from the growers in the Hood River Valley to the packing facilities at Underwood Fruit just west of the City of Bingen. Delivery trucks, concrete mixers, dump trucks, and chip trucks are frequent participants in the interstate flow of goods across the Columbia River. Approximately 2 percent to 3 percent of the vehicles traveling on the existing bridge are freight trucks; due to the narrow lanes and geometric restrictions of the bridge, some freight trucks use The Bridge of the Gods (22 miles to the west) or The Dalles Bridge (24 miles to the east) to cross the Columbia River (Exhibit 3-9). Many residents of western Klickitat County regularly access shopping, dining, and entertainment options in the City of Hood River.

Two port districts operate in the API, both of which promote regional trade of manufactured goods and recreation-based activities. The Port's assets include commercial and industrial lands, recreation facilities, the Hood River Bridge, and the Hood River Airport. The Port of Klickitat owns and leases commercial and industrial properties and facilities, provides waterfront recreation facilities, and oversees environmental stewardship of sensitive lands.

The economies of Klickitat County and Hood River County can largely be viewed as an integrated regional economy. Although both counties have industrial and commercial enterprises, the region provides a bi-state workforce and access to complimentary businesses that strengthen each county's economy. Interviews with local elected officials, businesses, and other stakeholders highlighted the close connection between communities on each side of the Columbia River and the shared regional economy (EnviroIssues 2018). Interviewees consistently stated that the bridge was an essential element to the economic vibrancy of the region and loss of it would be life changing. Several mentioned that Washington residents depend on the bridge more than Oregon residents for medical services, retail shopping, access to I-84, and jobs.

Project Impacts and Benefits

No Action Alternative

Under the No Action Alternative, the current bridge restrictions would continue to limit freight truck travel across the Columbia River, although the Port allows some oversized truck crossings with specific conditions. Eventual closure of the existing bridge would result in indirect impacts of increased travel time and cost and a reduced employment pool that supports industry and business on both sides of the Columbia River. Further, businesses in the City of Hood River would suffer economically from fewer customers from Washington, and industries in the cities of White Salmon and Bingen would be substantially weakened without a close connection to the interstate system, agricultural products and storage/processing facilities, and the additional workforce in Oregon.

If a catastrophic event would occur prior to 2045 and result in closure of the existing bridge, the Mid-Columbia region economy would be immediately and substantially affected. Freight transport, interstate commuters, and deliveries and service previously using the bridge would be diverted to other bridges that are over 20 miles away. The viability of businesses that rely on interstate commerce could be threatened through the loss of this critical transportation connection. Similarly, access to jobs could be severed for those that live on one side of the river and work on the other. Commuting using other bridges could be feasible for some and infeasible for others with an extra 90 miles added to a daily roundtrip. The loss of business activity and jobs would lead to fewer tax revenues being collected.

Build Alternatives

Construction of either of the build alternatives would bring money into the local and regional economy through short-term increases in employment and associated consumer spending, which can have a multiplier effect, creating additional jobs. Direct construction spending for the replacement bridge would be approximately $253.8 million dollars and would employ approximately 80 full time workers over the 3-year construction period to build the replacement bridge. Approximately 72 full time workers would be needed during the 3-year deconstruction period to remove the existing bridge. Local businesses could be temporarily affected by changes in traffic patterns, access, parking, noise, and the visual setting during construction; less so for deconstruction.

The replacement bridge would provide a long-term benefit of an improved regional connection between the economies of Hood River and western Klickitat County and could benefit regional freight movement with no width and load restrictions. The replacement bridge would also benefit the local economy with a reliable travel connection between the cities of White Salmon, Bingen, and Hood River so that residents and employees can continue to access to jobs, services, and shopping across the river. Properties acquired to construct the Project would reduce annual tax revenue in Klickitat County by less than 0.01 percent under each alternative. Alternative EC-2 may displace Port facilities including a maintenance building and their administrative office building as listed in Exhibit 3-30. Alternative EC-3 would displace eight businesses and five hotel suites, as listed in Exhibit 3-30. Relative to the size of the employment base within the region, the business and employee displacements by Alternatives EC-3 would have a low impact on regional economic conditions. Adequate commercial property is available in Hood River to support relocation; if the owners of these eight businesses would choose to relocate locally, there would be minimal impacts to the local economy. The Best Western Plus Hood River Inn has 194 guest rooms and suites. The loss of five suites for the hotel represents a loss of 2.6 percent of the rooms and would not be expected to prevent the inn from continuing to provide lodging.

By removing vehicle size and load restrictions, use of the replacement bridge could draw traffic away from other bridges over time and increase traffic near the replacement bridge, potentially resulting in an indirect impact of a slight increase in economic activity in the cities of White Salmon, Bingen, and Hood River. The replacement bridge would increase opportunities for pedestrian and bicyclists to cross the river, which could bring more recreation and tourism business to the cities of White Salmon, Bingen, and Hood River.

As the existing bridge is tolled, the Port and local agencies assume that the vehicle travel lanes on the replacement bridge would also be tolled. Future toll rates for the replacement bridge have not been determined at this time; however, an increase in toll rates compared to existing rates would likely occur. Toll rates would be set by the bridge owner and could take into account various factors, such as, but not limited to: construction delivery method, debt service on any bonds or loans used to design and construct the bridge, operation and maintenance costs, a future bridge replacement fund, and other bridge related costs or liabilities such as ongoing maintenance costs. These costs and liabilities would be balanced against household incomes for local communities and the tolerance level for higher tolls as a trade-off for a replacement bridge. The long-term consequence of a higher toll would be that it may cause people to change trip behavior, especially for casual trips for shopping or entertainment, which could affect business revenues. Conversely, an increase in tolls may be tolerable for freight businesses that depend on the bridge, especially since a replacement bridge would remove current height, width, and weight limitations on vehicles. Thus, the impact of increased tolls on local and regional economies may be offset by the benefits of a more functional and multimodal bridge that enhances business operations. Economic impacts at the household level would depend on the ability to alter trip behavior and/or absorb higher tolls costs in household discretionary income. Means-based pricing could also be considered when setting the new toll rates.

Exhibit 3-30. Summary of Impacts to Economic Resources

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Regional Connectivity	• Reduced connectivity, economic viability, and workforce when existing bridge closes	• Improved regional economic connection for freight, workers, and residents • Reliable cross-river route to access jobs, services and shopping benefiting the local economy	
Construction Employment	• None	• 80 full-time construction workers for 3 years to build the replacement bridge • 72 full-time workers for the demolition of the existing bridge	
Direct Construction Spending	• None	• $253.8 million over duration of construction	
Business Displacements	• None	• Potentially 2 Port buildings	• 8 businesses • 5 hotel suites

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

To reduce construction impacts, the Port or construction contractor would dedicate staff to work specifically with impacted businesses during construction to minimize Project-associated impacts. Construction mitigation plans would be developed in conjunction with the construction contractor to address the needs of businesses and could include, but are not limited to, the following measures:

- Provide a 24-hour construction telephone hotline.
- Provide detour, open for business, and other signage as appropriate.
- Implement promotion and marketing measures to help impacted business districts maintain their customer base during construction.
- Maintain reasonable business access and coordinate with businesses during times of limited access.
- Establish effective communications with the public through measures such as informational meetings and construction updates, alerts, and schedules.

Long-Term Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate long-term impacts to economic conditions:

- Conduct all right-of-way acquisitions and business relocations in accordance with the Uniform Act, as amended, as well as in compliance with Oregon or Washington relocation programs. All impacted property owners would be compensated for property rights acquired at fair market value and relocation assistance would be provided in accordance with federal or state laws, as applicable. The Uniform Act provides protection and assistance for people impacted by the acquisition, rehabilitation, or demolition of real property for federal or federally funded projects.

Additional detail on economic resources is provided in the Social and Economic Technical Report (Appendix M).

3.11. Park and Recreation

Existing Conditions

There are 31 existing and proposed park and recreation facilities, including five shared use trails, located within the API. Most facilities are situated along the Columbia River and/or associated with river-based activities. The dominant activities associated with these sites include boating, sailing, wind surfing, kiteboarding, and fishing. The Columbia River Gorge, and specifically the City of Hood River, are world renowned for windsurfing, kiteboarding, and stand up paddle boarding. Other recreation activities in the area include bicycling, kayaking, wildlife viewing, hiking, and camping.

Waterfront Trail crosses under the existing Hood River Bridge.

Park and recreation facilities located closest to the existing bridge and the replacement bridge would likely be affected by the Project. These facilities include:

- Bridge Park: a proposed 12-acre park in the City of White Salmon partially located underneath the existing bridge
- Hood River Marina Park and Basin: a 27-acre park that includes a marina, beach, yacht club, boat launch, cruise ship dock, history museum, beach, open lawn area, and the Port's administration office and maintenance shop, which functionally support recreational activities at the Hood River Marina Park and Basin
- Waterfront Trail: an existing 2.8-mile trail along the waterfront in the City of Hood River, crossing underneath the existing bridge

Project Impacts and Benefits

No Action Alternative

Increased traffic volumes over time under the No Action Alternative would result in a direct impact of minor, imperceptible increases to noise levels (0 decibels to 3 decibels) at park and recreation facilities closest to I-84 and the bridge. At such a time in the future that the existing bridge exceeds its operational life or a catastrophic event occurs and the bridge is closed, the No Action Alternative would result in indirect impacts of reduced noise levels at park and recreation facilities near the bridge with the elimination of cross-river traffic on the bridge, although traffic noise from I-84 and SR 14 would remain. Closure of the bridge would also result in reduced cross-river vehicle access to facilities, potentially changing visitation patterns, parking demand, and maintenance needs.

Build Alternatives

Construction of the build alternatives would result in temporary noise, air, visual, and access changes to park and recreation facilities, particularly those closest to construction areas. Both build alternatives would result in additional short-term impacts to park and recreation facilities closest to the bridge during construction. These impacts include changes in travel patterns to access park and recreation facilities due to detour routes during construction, as well as construction noise, dust, air pollution, and changes in the visual environment at parks and recreation facilities, as listed in Exhibit 3-31. Both build alternatives could require temporary closures of Bridge Park (if developed), parking areas of Hood River Marina Park and Basin, and a short segment of Waterfront Trail (with a trail detour) during construction.

Under Alternative EC-2, a temporary access road may be developed in the Hood River Marina Park and Basin to provide access to the Port's maintenance shop during construction. If construction or permanent impacts to either the Port's administrative office and/or the maintenance shop occur that render the buildings and storage areas nonfunctional or inaccessible, then the facilities may be required to be relocated.

Alternative EC-2 and Alternative EC-3 would result in long-term, direct impacts of a wider bridge over areas planned for active uses in Bridge Park as shown in Exhibit 3-32 and Exhibit 3-33. Both build alternatives would require acquisition of land from Hood River Marina Park and Basin to accommodate the southern terminus of the replacement bridge, resulting in realigning E. Port Marina Drive, removal of parking spaces for the boat launch, the Port's administrative office, and the Port's maintenance shop under Alternative EC-2. Alternative EC-3 would require realigning E. Port Marina Drive but avoid other impacts to the Port's property. The wider replacement bridge would cover a longer segment of Waterfront Trail than the current bridge does for both build alternatives. Alternative EC-2 would cover a 60-foot trail segment and Alternative EC-3 would cover a 150-foot trail segment, as compared with the 24-foot trail segment currently covered, potentially increasing safety and security concerns under the bridge; additional lighting would be incorporated into the Project design to offset these concerns.

The shared use path on the replacement bridge would enhance pedestrian and bicycle access to park and recreation facilities, potentially resulting in indirect impacts of changes in visitation patterns, parking demand, and maintenance needs under both build alternatives.

Exhibit 3-31. Summary of Impacts to Park and Recreation Facilities

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
All park and recreation facilities	• No changes	• Temporary changes in travel patterns and access, noise levels, dust, air pollution, and visual environment at facilities • Enhanced pedestrian and bicycle connectivity with the new shared use path • Minor change in visitation patterns, bicycle and vehicle parking demand, and maintenance needs	
Bridge Park	• No closures • Bridge over non-active park areas	• 2.6-acre temporary construction easement	• 1.5-acre temporary construction easement
		• Potential temporary park closures during construction • Wider bridge over park areas planned for active uses	
Hood River Marina Park and Basin	• No closures • No conversion to right-of-way	• Temporary closures of parking areas for boat launch, Port administration office, and Port maintenance shop • Removal of 3 parking spaces for boat launch, 15 spaces for Port office, and unstriped parking/storage for maintenance area • If needed, a new temporary access road developed to provide access to the Port's maintenance shop • If Port's administration building and/or maintenance shop and associated storage become non-functional or inaccessible during or after construction, relocation of these facilities would occur • 0.6 acre converted to right-of-way	• Temporary closures of parking areas for boat launch • 0.2 acre converted to right-of-way
Waterfront Trail	• No trail closures • 24-foot trail segment covered by bridge	• Temporary trail closures with trail detour during construction	
		• 60-foot trail segment covered by bridge	• 150-foot trail segment covered by bridge

Exhibit 3-32. Impacts to Park and Recreation Facilities under the Preferred Alternative EC-2

Exhibit 3-33. Impacts to Park and Recreation Facilities under Alternative EC-3

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to park and recreation facilities:

- Pedestrian and bicycle access to Waterfront Trail would be maintained during construction. A signed, ADA-accessible detour route would be provided when portions of the trail are temporarily closed during construction.
- Advanced notice to park and recreation users about sidewalk, trail, and/or park closures and temporary access changes during construction would be provided.
- Contractors would be required to minimize dust and air pollutant emissions. Potential control measures are included throughout the WSDOT standard specifications and ODOT standard specifications Section 290. These control measures include vehicle and equipment idling limitations and minimize vehicle track-out and fugitive dust. These measures would be documented in the temporary ESCP that the contractor is required to submit prior to the preconstruction conference. To reduce the impact of construction delays on traffic flow and resultant emissions, road or lane closures should be restricted to non-peak traffic periods when possible.

Long-Term Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate long-term impacts to park and recreation facilities:

- Appropriate lighting along the segment of the Waterfront Trail covered by the replacement bridge would be incorporated as part of the Project to mitigate lighting and visibility concerns caused by the wider bridge.
- Wayfinding signage would be provided for the new shared use path indicating connections to park and recreation facilities.
- Coordination with the City of White Salmon would be conducted during the Project's design phase or when the design of Bridge Park advances (if prior to construction of the replacement bridge) to incorporate the proposed alignment and increased width of the replacement bridge in the conceptual plan for Bridge Park.
- Alternative EC-2: Design of the replacement bridge would be coordinated with design of the City of White Salmon's proposed Bridge Park to avoid or address any potential design conflicts between the proposed pedestrian bridge for the park and the stormwater facility for the bridge.
- Alternatives EC-2: Opportunities would be considered to reconfigure the Hood River Marina Park and Basin boat launch parking area to replace parking spaces removed by the Project.

Additional detail on park and recreation resources is provided in the Park and Recreation Technical Report (Appendix K).

3.12. Section 6(f) Properties

Existing Conditions

Section 6(f)(3) of the LWCF Act of 1965 (referred to as Section 6(f)) states that any property acquired and/or developed with funds from the LWCF State Assistance Program shall not be wholly or partly converted to uses other than public outdoor recreation uses without the approval of the NPS. There are three properties in the API that received funding from this program and are therefore protected under Section 6(f):

Hood River Marina Park and Basin is located immediately west of the existing bridge.

- Bingen Marina and Marina Park: This site received funding in 1968 for development of the boat marina
- Hood River Marina Park and Basin (previously described in Section 3.11, Park and Recreation): This site received funding in 1970, 1972, 1973, and 1974 for boat ramp, dock, and marina utility improvements
- Wygant State Natural Area: This site received funding in 1974 for the Lausmann-Wygant Footpath

In addition, the Washington State Recreation and Conservation Office and the Oregon Parks and Recreation Department (OPRD) award state-funded grants that have similar long-term stewardship obligations. There are eight additional park and recreation facilities that have received state grant funding, including Daubenspeck Park, Bingen Lake, Waterfront Trail (previously described in Section 3.11, Park and Recreation), The Hook, Waterfront Park, Nichols Basin, Rotary Skatepark, and Indian Creek Trail. One of the state-grant funded facilities, Waterfront Trail, is partially located within the Section 6(f) boundary of the Hood River Marina Park and Basin; therefore, that segment of the trail is also protected under Section 6(f).

Project Impacts and Benefits

No Action Alternative

The No Action Alternative would not physically alter any of the Section 6(f) or state grant-funded park and recreation facilities as described in Section 3.11, Park and Recreation, so it would not result in any conversion of land under Section 6(f) or state stewardship requirements, as listed in Exhibit 3-34.

Build Alternatives

The temporary closure of a portion of the Hood River Marina Park and Basin, as well as the temporary development of an access road, and potential relocation of the Port's maintenance shop and/or administrative office to accommodate construction of Alternative EC-2 (as described in Section 3.11, Park and Recreation) – if not mitigated - could result in a temporary non-conforming use or a conversion of this property under Section 6(f). Alternative EC-3 could require a temporary closure of a portion of the Hood River Marina Park and Basin for short durations during construction. Both build alternatives would require right-of-way acquisition of less than 1 acre from this park, likely resulting in a conversion under Section 6(f). Longer segments of Waterfront Trail would be covered by the replacement bridge under both alternatives, and a portion of the trail would be temporarily closed (with a detour route provided) during construction. Additional coordination with the NPS and OPRD, including an official Section 6(f) boundary determination for this the Hood River Marina Park and Basin, is needed to determine the extent of Section 6(f) impacts.

The shared use path on the replacement bridge would enhance pedestrian and bicycle access to Section 6(f) properties and state grant-funded park and recreation facilities, potentially resulting in indirect impacts of changes in visitation patterns, parking demand, and maintenance needs under both build alternatives.

Exhibit 3-34. Summary of Impacts to Section 6(f) Properties and State Grant-Funded Park and Recreation Facilities

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Section 6(f) Properties	• No conversion or temporary non-conforming use	• Review by NPS needed to determine likelihood of Section 6(f) temporary non-conforming use or conversion of Hood River Marina Park and Basin park and the segment of Waterfront Trail located within the park; additional coordination with NPS and OPRD needed	
State Grant-Funded Facilities	• No conversion or temporary non-conforming use	• Additional coordination with OPRD needed to determine impacts to Waterfront Trail	

Avoidance, Minimization, and/or Mitigation Measures

Measures to avoid, minimize, or mitigate impacts to Section 6(f) properties and state grant-funded facilities are listed in Section 3.11, Park and Recreation. Additional coordination with OPRD and the NPS is needed once right-of-way ground surveys, legal descriptions, and title research begins, including a formal Section 6(f) boundary determination for the Hood River Marina Park and Basin, before it can be determined whether a temporary non-conforming use or conversion would result, which could require additional mitigation.

Additional detail on Section 6(f) properties and state grant funded park and recreation facilities is provided in the Section 6(f) Technical Report (Appendix L).

3.13. Historic Resources

Existing Conditions

The NHPA (CFR 36 Part 800) requires federal agencies and projects receiving federal funding to consider the effects of a project on historic properties." Historic properties include any prehistoric or historic districts, sites, buildings, structures, or objects that are eligible for or already listed on the NRHP. The NHPA categorizes the effects of projects into three groups: "no historic properties affected," "no historic properties adversely affected," and "historic properties adversely affected." One historic resource within the area of potential effects (APE) – the Hood River Loops is a contributing feature of the Columbia River Highway NRHP Historic District and the Columbia River Highway National Historic Landmark (NHL) District (Exhibit 3-35). Additionally, the existing Hood River Bridge has been determined eligible for listing and two railroads and six residences in the City of Hood River and City of White Salmon are potentially eligible.

Hood River Bridge was constructed in 1924.

The Hood River Bridge was determined eligible for the NRHP in 2004 and reconfirmed in 2020 (Appendix H, Historic Resources Technical Report). The 4,418-foot bridge was completed in 1924 and modified in 1938 to include a vertical lift span in its central segment to allow continued river navigation after the water level changed following construction of the Bonneville Dam and to accommodate larger vessels. The bridge is eligible under NRHP Criterion A in the area of transportation for its statewide significance as the second oldest vehicle crossing between Oregon and Washington and has local significance in the area of engineering under NRHP Criterion C for its central lift span which embodies the distinctive characteristics of the vertical-lift Pennsylvania-Petit steel through-truss. The bridge retains all aspects of its historic integrity including location, design, setting, materials, workmanship, feeling, and association.

The Hood River Loops, a contributing feature of the Columbia River Highway NHL District, lies to the south and east of the Project along the basalt cliffs of the Columbia River Gorge (Exhibit 3-36 and Exhibit 3-37). In 2000, the Secretary of the Interior designated the Columbia River Highway, including the Hood River Loops, as an NHL. Construction of the Columbia River Highway occurred between 1913 and 1922 and the route is notable for the views it provides of waterfalls and streams, fruit orchards, and the Columbia River and for its design features that include multiple bridges, masonry guard walls, and wood guard fences. The Columbia River Highway is significant under NHL Criterion 1 for its exemplary highway design in 20th-century America. It is also significant under NHL Criterion 4 for the contributions to the fields of civil engineering and landscape architecture made by its designer, Samuel C. Lancaster, and for being the first scenic highway in the U.S. Today, the remaining pieces of highway in the NHL district, including the Hood River Loops, retain much of their original character. Historically, the Hood River Loops had views of the Hood River Bridge, but these views have been altered or have diminished gradually over the years as vegetation has grown up along the roadside and as development of other infrastructure and industrial uses have changed the view toward the bridge and its surroundings.

Two railroads located within the Project APE have also been determined to be potentially eligible for listing on the NRHP. The Spokane, Portland, and Seattle (SP&S) Railway is located in Washington, paralleling the Columbia River and is owned and operated today by BNSF Railway (Exhibit 3-35). Construction of the 0.3-mile long SP&S rail line within the Project APE was completed between 1906 and 1907 and is part of a larger linear resource that retains integrity of setting, association, location, and feeling is eligible for the NRHP. The second railroad, the Oregon Railway and Navigation Company's (OR&N) Columbia River main line, is located in Oregon to the east of the existing Hood River Bridge and is owned and operated today by the Union Pacific Railroad. The approximately 0.25-mile long rail line segment of the OR&N railroad within the Project APE was originally constructed in the 1880s but was significantly modified in the early twentieth century to its current alignment (Exhibit 3-35). The OR&N railroad is significant for its association with the broad pattern of events that shaped the Columbia River Gorge region and the Pacific Northwest. These two segments of railroad are both part of larger linear resources and contribute to the SP&S and OR&N railroad's overall historical significance in the areas of transportation and commerce.

Exhibit 3-35. Area of Potential Effect and Historic Resources

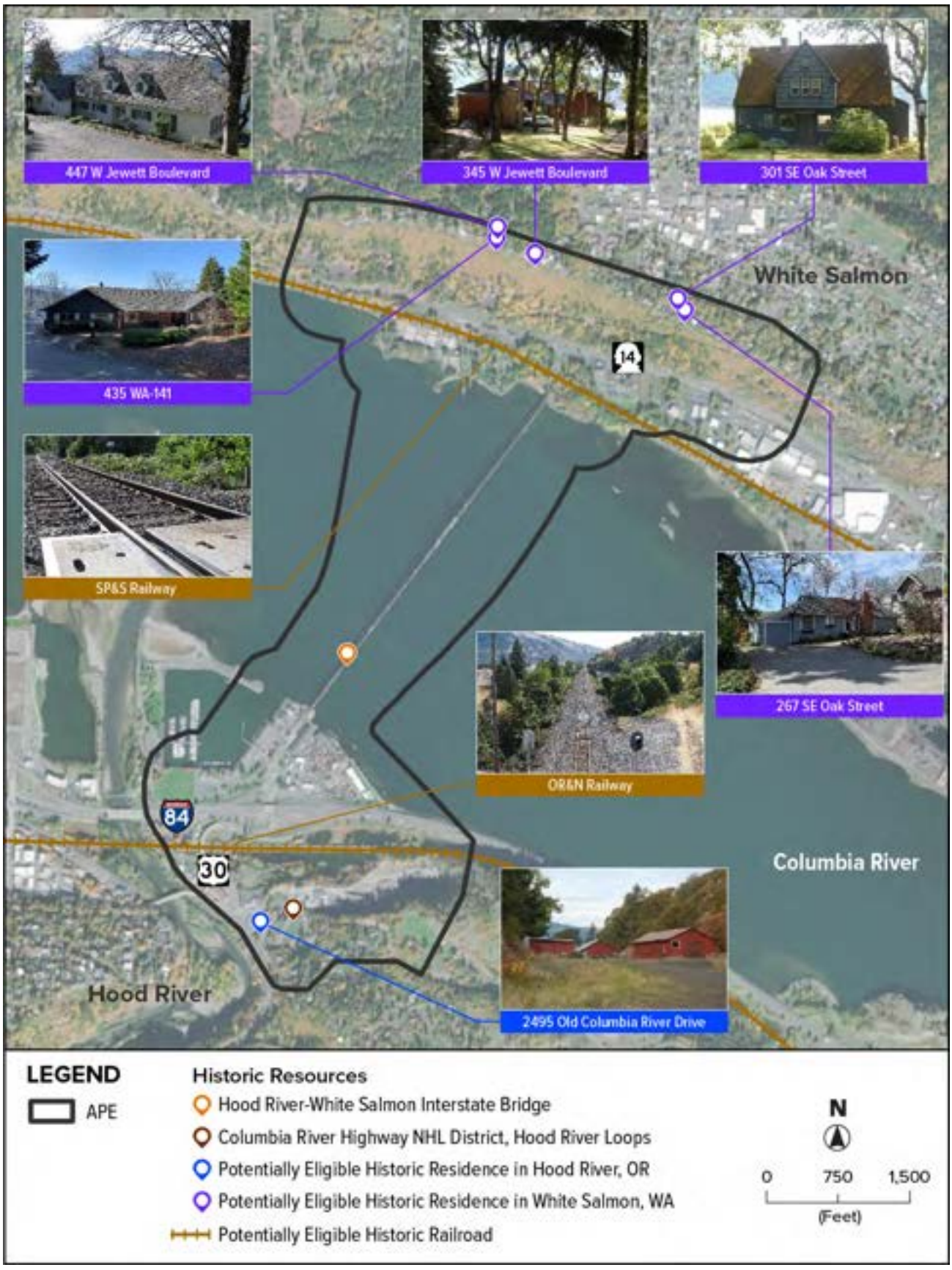


Exhibit 3-36. Hood River Bridge Photograph (1920s) as Viewed from the Hood River Loops

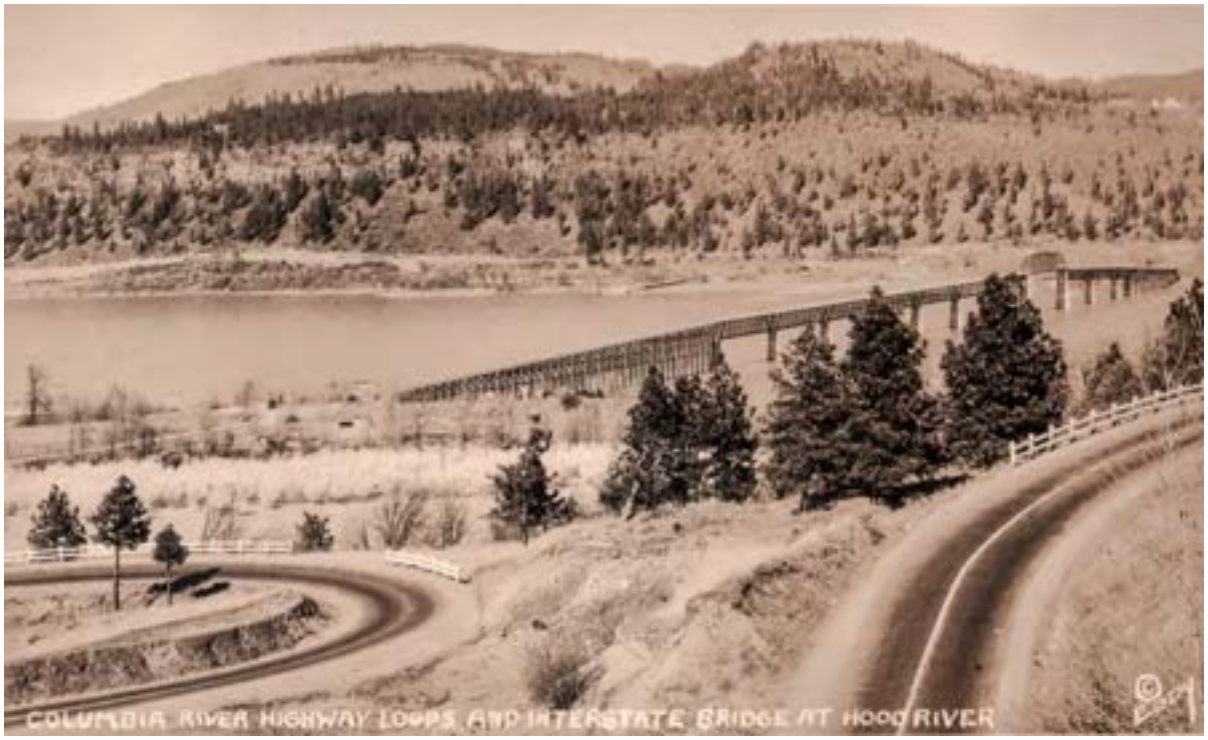


Exhibit 3-37. View from the Hood River Loops Looking North toward the Existing Bridge

There are six residential structures potentially eligible under the NRHP (five are located in the City of White Salmon and one is located in the City of Hood River) (Exhibit 3-35). All structures are older than 45 years and retain varying degrees of historic integrity based on individual circumstances. These structures also have views of the Hood River Bridge – an NRHP eligible structure.

Project Impacts and Benefits

No Action Alternative

The No Action Alternative is not expected to disturb or alter any historic resources, except the existing bridge, and would not result in any impacts to these resources. If the existing bridge is left in place and further deteriorates, it may need to be closed and removed resulting in an adverse impact to the bridge, an eligible historic resource. If a catastrophic event occurred, such as an earthquake, landslide, or barge or vessel strike, the bridge could be damaged or collapse; in this event the existing bridge could be severely damaged and mitigation opportunities could be limited.

Build Alternatives

Exhibit 3-38 summarizes historic resources impacts by alternative. The build alternatives, Alternatives EC-2 and EC-3, would result in the deconstruction and removal of the existing Hood River Bridge, an NRHP-eligible structure. Although other alternatives were considered to retain the Hood River Bridge either retrofitted for all modes of traffic or for pedestrian and bicycle use, none of these alternatives met the purpose and need for the project (see Section 2.3 for more detail on the alternatives screening process). Physical deconstruction (demolition) of or damage to all or part of a property, as well as removal of a property from its historic location are considered examples of adverse effects under Section 106 of the NHPA. Under these criteria, the build alternatives would result in an adverse effect to the bridge. The adverse effect to the bridge would occur after construction of the replacement bridge and all vehicular traffic is rerouted off the existing bridge.

For the other historic resources, the build alternatives would result in "no effect" or "no adverse effects." In general, temporary construction impacts would include increased noise and the visual intrusion of construction equipment, and long-term impacts would include changes to the views or the visual setting of the historic resources.

The build alternatives would result in temporary and permanent, indirect impacts to the Hood River Loops. Replacement of the Hood River Bridge would permanently alter the view of the bridge from the Hood River Loops. Temporary changes would consist of the visual intrusion and construction-related noise and atmospheric impacts from equipment and temporary structures. Short-term noise levels for construction activities are expected to range from approximately 70 A-weighted decibels (dBA) to 100 dBA and possible increased traffic. The Project would result in a Section 106 finding of "no historic properties adversely affected" for the Hood River Loops as the bridge's construction was not historically associated with the construction of the Loops, views from the Loops to the bridge are intermittent due to the weaving nature of the roadway and vegetation that obstructs views, the views have been altered from industrial development, and the Project would not fundamentally alter the significant historic components of the Loops or the existing visual environment visible from the highway.

The build alternatives would result in temporary and permanent potential impacts to the general setting of the SP&S Railway. Permanent impacts would include replacing the Hood River Bridge that would alter the view of the bridge from the railway; placement of a new bridge soffit over the tracks; location of the new bridge piers at least 25 feet from the track centerline with extra distance for curvature; and a change in the crossing location of the bridge either east or west of the existing bridge depending on the alternative. The permanent changes would not represent physical changes or a permanent incorporation of the railway or its right-of-way. During construction, changes would include visual intrusion, construction-related noise, and atmospheric impacts from equipment and temporary structures. In addition, the Project would require a temporary construction easement across the BNSF Railway right-of-way with a designated crossing for work vehicles, workers, equipment, and materials, the use of overhead cranes and drilled shaft equipment within the easement, formwork over the tracks, an 8-foot high fence across the BNSF Railway right-of-way for pedestrian access. The Port would coordinate with BNSF Railway for demolition activities to minimize service delays.

The build alternatives would involve several changes to the setting of the OR&N railroad. Potential impacts would consist of an altered the view of the bridge from the main line. The replacement bridge, however, would be physically distant from the railroad and views of the replacement bridge would only be intermittent due to the presence of intervening vegetation and transportation infrastructure. These changes would have no effect upon the characteristics that make the property eligible for the NRHP.

The eligible residential structures would experience some degree of potential temporary and permanent impacts. For the residences with views of the existing Hood River Bridge, impacts would consist of the replacement of the bridge, thereby altering the view. For all six residences, temporary changes would consist of the visual intrusion and construction-related noise and atmospheric impacts from equipment and temporary structures. For many of the residences, views of the bridge are partially obstructed by other development or vegetation. The historic qualities of the setting viewed from the residences has been altered by increased industrial activities and residential development since they were constructed. In addition, the alignments of the proposed Project would be similar to the alignment of the existing bridge and would not obscure, fragment, or significantly contrast with the existing visual environment as observed from those residences with views. The Project features, construction-related activities, and facility operation, therefore, would have no effect or would not adversely affect the characteristics that make these residences eligible for the NRHP.

Exhibit 3-38 summarizes historic resources impacts by alternative.

Exhibit 3-38. Summary of Impacts to Historic Resources

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Hood River Bridge	• No effect	• Adverse effect resulting from bridge deconstruction and removal	
Columbia River Highway NHL District, Hood River Loops	• No effect	• No adverse effect since historic qualities remain largely intact	
SP&S Railway	• No effect	• No adverse effect since historic qualities remain largely intact	
OR&N Columbia River main line	• No effect	• No effect	
Six Potentially Eligible Residential Structures	• No effect	• No adverse effect (5 structures) and no effect (1 structure)	

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to historic resources:

- Implement the avoidance, minimization, and/or mitigation commitments for construction impacts identified in Section 3.19, Visual and Section 3.20, Noise and Vibration.
- In compliance with Section 106 of the NHPA, FHWA, ODOT and the Port will prepare a mitigation plan to resolve the adverse effects to the existing bridge. The Oregon SHPO, Washington State DAHP, tribes, Section 106 consulting parties, and public will have an opportunity to provide input on a draft mitigation plan. The final mitigation plan will be published as part of the Programmatic Agreement in the combined Final EIS/ROD. The Programmatic Agreement will describe the actions to be taken by the signatory agencies of the agreement to meet their environmental compliance responsibilities for the Project after the combined Final EIS/ROD are published. These responsibilities include mitigation for construction activities and long-term impacts.

Long-Term Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate long-term impacts to historic resources:

- For the build alternatives, implement the avoidance, minimization, and/or mitigation commitments for long term impacts identified in Section 3.19, Visual and Section 3.20, Noise and Vibration.
- Implement the mitigation measures identified in the final mitigation plan and Programmatic Agreement (described above).

Additional detail on historic resources is provided in the Historic Resources Technical Report (Appendix H).

3.14. Archaeological Resources and Traditional Cultural Properties

Existing Conditions

Archaeological field work within the APE.

The Project's APE (Exhibit 3-35 in Section 3.13, Historic Resources) was traditionally utilized by several Native American groups and bands that fished the Columbia River, White Salmon River, and Hood River and gathered plants, vegetables, berries, and nuts from the shoreline and upland. These included the Chilluckittequaw people who resided both north and south of the Columbia River. Generally, family groups would winter along the shoreline and move upland during the summer. The Chilluckittequaw bands extended from an area approximately 10 miles below The Dalles Dam to the White Salmon River. The area was also historically inhabited by the Klickitat people. Several Native American villages were located within the vicinity of the APE and recorded by Lewis and Clark including houses spread over several miles located on the north bank of the river. In total, approximately nine village sites have been identified on the north and south side of the river by archaeologists and ethnographers.

Euro-American history in the area began when Lewis and Clark traveled on the Columbia River, making a brief stop near present-day City of White Salmon in 1806. Following the Lewis and Clark expedition, fur traders passed through. It was not until the 1850s that Euro-Americans began to settle near the cities of White Salmon and Hood River. Settlement on the Washington side of the River picked up in the 1870s and 1880s when the settlement was first called 'White Salmon.' Settlement on the Oregon side in the City of Hood River followed a similar pattern with the first settlers arriving in the 1850s and the town was first platted in 1881. The Oregon Highway Department completed the Columbia River Highway through the City of Hood River in 1921 resulting in a rapidly growing population and business activity.

The NHPA (CFR 36 Part 800) requires that Federal agencies and projects receiving federal funding take into account the Project effects on historic properties. Historic properties include any prehistoric or historic districts, sites, buildings, structures, or objects that are eligible for or already listed in the NRHP. Federal and State laws prohibit the disclosure of archaeological information to protect these resources including 43 CFR Part 7, RCW 42.56.300, and ORS 192.345. For this reason, the descriptions of archaeological sites and TCPs within the APE has been kept intentionally general in this section.

As part of the Project, a baseline study documented previously recorded archaeological investigations within the vicinity of the APE. Within a 1-mile radius of the APE, 28 previous cultural resource surveys have been recorded; 10 archaeological sites in Washington and 8 in Oregon are within a 1-mile radius of the bridge. Of the three archaeological sites within the APE, one is a historic structure remain and the other two are precontact (the period before contact of Native Americans with outside cultures) sites. One of the precontact sites has been evaluated and recorded as eligible for listing on the NRHP under Criterion D (potential to yield information important for prehistory), whereas the other precontact site has not been evaluated. Both precontact sites will be evaluated or re-evaluated under all four eligibility criteria.

In July 2019, an archaeological survey was conducted on private property within the APE (Smith and Gall 2020) as part of development unrelated to the Project. In October of 2019, a cultural resource survey was conducted on lands within the Alternative EC-2 and Alternative EC-3 Washington portions of the APE (Archaeological Survey Report). Based on the results of these surveys, additional investigations are planned for the Project. Further findings will be summarized in the combined Final EIS/ROD. No archaeological surveys were completed in Oregon within the APE due to extensive fill (15 feet to 20 feet deep) in this area.

Ethnographic studies for the Project were prepared by the Warm Springs, Nez Perce, and Yakama Nation tribes that documented traditional and present-day cultural practices; fishing, hunting, and gathering practices; important places; and, TCPs valued by these tribes (Watters 2020a, 2020b, 2020c). Four TCPs, including village sites, an ancient fishing location, and a legendary site, were identified in the APE and located on both sides of the river; three of the TCPs are recommended eligible for inclusion in the NRHP. In addition, large landforms, such as peaks and ridges, that overlook the Columbia River are viewsheds that are culturally significant to Native Americans. Within the vicinity of the APE, there are also many traditional

places used by Native Americans from time immemorial to present day for hunting, plant gathering, and other cultural practices. Soundscapes also play a central role in ceremonial practices; "natural silence" promotes spiritual supplication and are important to cultural practices and traditional lifeways. The ethnographic studies noted the importance of river confluence areas to tribal activities and practices, in particular, the White Salmon River and Hood River both of which are located outside but near to the APE. The mouth of the White Salmon River is located approximately 1.5 miles west of the current bridge on the Washington side and the mouth of Hood River is located approximately 1,750 feet west of the existing bridge on the Oregon side of the Columbia river.

Construction of the Bonneville Dam and creation of the Lake Bonneville in 1937 inundated the Columbia River's historic valley, landforms, and shorelines upstream of the dam. These areas were historically used for Native American villages, burial grounds, fishing and river access, and camps for hunting and gathering practices. Many of these sites are thought to have been inundated by the dam construction (Ozbun et al. 2005)

Project Impacts and Benefits

No Action Alternative

The No Action Alternative would not disturb or alter any documented archaeological resources or TCPs, so no direct impacts to these resources would occur from the Project (Exhibit 3-39). If a catastrophic event occurred, it is possible that the existing Hood River Bridge could be severely damaged. Any repair or removal of bridge materials could include ground disturbing activities, which could adversely affect archaeological resources, or could involve temporary noise and visual impacts to viewsheds and soundscapes to places used by tribal fishers, hunters, and gatherers.

Build Alternatives

Construction of a replacement bridge would generate temporary noise impacts (e.g., pile driving) within and beyond the APE. This increased noise would disturb Native American cultural and ceremonial practices at TCPs within and near the APE. Similarly, construction equipment (e.g., barge mounted cranes) and lighting could also intrude on viewsheds that contribute to the connected experience of fishing or other practices by Native Americans in the APE. Confluence areas at the mouth of the White Salmon and Hood rivers noted as important locations by Native American tribes would temporarily experience increased noise levels and intrusions on views from construction equipment. Noise from construction activities would be greater at the mouth of Hood River located much closer to the bridge, which could lessen fishing experiences in particular, as noise might intrude on the quiet activities associated with fishing. Although noise may be audible at times during construction at the mouth of the White Salmon River, this would be diminished by the river's distance from the bridge. Impacts to the TFASs and fish processing facility are discussed in Section 3.5, Treaty Fishing Rights.

Under Alternative EC-2, documented archaeological sites would be avoided by the bridge and connecting roadway alignment; however, associated bridge infrastructure could have an adverse effect to an archaeological site due to ground disturbance. The bridge and connecting roadway alignment for Alternative EC-3 and associated bridge infrastructure would likely adversely affect one archaeological site. Additional archaeological investigations are scheduled for the Project and findings will be summarized in the combined Final EIS/ROD. Relocation of proposed associated bridge infrastructure will continue to be studied by the Project as more archaeological data and evaluation becomes available. Alternatives EC-2 and EC-3 would not directly affect river confluence areas.

The submerged portion of the Columbia River shorelines as well as the river bottom, may also contain archaeological artifacts and sites, which both build alternatives could adversely affect where bridge foundations and piers are constructed. Limited recorded survey data is available to determine the presence and location of submerged resources; thus, no conclusive findings of effect on these potential archaeological resources can be made at this time. The Bonneville Power Administration contracted with ESA to prepare a narrative report and maps of submerged resources along the Columbia River from River Mile 144 to 295. The maps are confidential. The narrative report includes several sites or locations of known or reported cultural resources in the APE or vicinity, but the description of the location of these resources is vague and cannot be mapped. Neither Oregon SHPO's nor Washington DAHP's map databases show submerged resources within the APE.

Indirect effects from both build alternatives would include viewshed changes from and toward TCPs that are within and outside the APE due to the difference in height of the replacement bridge. After construction, at both river confluence areas, longer term changes to views would occur. Although views of the new bridge would be largely similar to current views from the confluence areas, some differences would occur resulting from the different scale and form of the new bridge as compared with the existing bridge and for background landscape views.

Exhibit 3-39. Summary of Construction, Direct, and Indirect Impacts to Archaeological Sites and TCPs

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
TCPs	• No effect	• Visual and auditory effects to viewsheds and soundscapes at TCPs within the APE • Noise and visual impacts during construction at river confluence areas.	
Archaeological Sites	• No effect	• Potential adverse effects to one archaeological site for placement of associated bridge infrastructure	• Potential adverse effects to one archaeological site for the bridge alignment and placement of associated bridge infrastructure
Indirect Impacts	• Temporary visual and auditory effects to viewsheds and soundscapes by construction equipment to remove the bridge after a catastrophic event	• Visual and auditory effects to viewsheds and soundscapes at TCPs, hunting and gathering grounds, river confluences, and other traditional places outside the APE	

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to archaeological resources and TCPs:

- Implement the avoidance, minimization, and/or mitigation commitments for construction impacts identified in Section 3.19, Visual and Section 3.20, Noise and Vibration.
- Continue coordination with CRITFC, BIA, and the all tribes that the Project has engaged in government-to-government consultation during Project construction, providing Project updates and opportunities for tribes' input into avoidance, minimization, and mitigation measures to protect precontact archaeological sites and TCPs.

Long-Term Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate long-term impacts to archaeological resources and TCPs:

- Consider interpretive signage for the new bridge explaining the significance to Native Americans of TCPs, hunting and gathering grounds, river confluences, and other traditional places inside and outside the APE.
- For the build alternatives, implement the avoidance, minimization, and/or mitigation commitments for long term impacts identified in Section 3.19, Visual and Section 3.20, Noise and Vibration.

Additional detail on mitigation measures for archaeological resources and TCPs will be provided in the Programmatic Agreement, which will be published in the combined Final EIS/ROD.

3.15. ENERGY

EXISTING CONDITIONS

Construction of a replacement bridge will require a short-term increase in energy consumption, but energy use over time should decrease with the implementation of stricter fuel economy standards.

Transportation accounts for a major portion of the energy consumed in Washington and Oregon, at approximately 34 percent and 31 percent, respectively. This is higher than the energy consumed by transportation in the U.S. overall, at approximately 29 percent. Petroleum (e.g., gasoline, diesel fuel, jet fuel) was the predominant source of transportation energy consumption in Washington and Oregon in 2016, at approximately 98 percent in both states. Natural gas and electric vehicles accounted for the remaining 2 percent of transportation energy consumption (EIA 2019).

Energy is commonly measured in terms of British thermal units (Btus). A Btu is defined as the amount of heat required to raise the temperature of 1 pound of water by 1 degree Fahrenheit. Washington ranks number 13 of the 50 states in terms of transportation energy consumption, with 700.1 trillion Btu of transportation energy consumed in the year 2016, and Oregon ranks number 30 with 300 trillion Btu (EIA 2019). On a per capita basis, Washington ranks number 19 of the 50 states in terms of transportation energy consumption, at approximately 96.2 million Btu (mmBtu) consumed per capita in 2016, and Oregon ranks number 40 with approximately 73.5 mmBtu consumed per capita (EIA 2019).

PROJECT IMPACTS AND BENEFITS

No Action Alternative

Vehicle fuel consumption dominates the energy use for each alternative and is largely determined by daily crossings and average travel speed. Direct impacts to energy use were evaluated assuming the No Action Alternative retains the existing bridge in its existing condition and configuration. If the bridge were to close in the future when it surpasses its operational life, or if a catastrophic event such as an earthquake or a barge strike occurs prior to the end of its operational life, vehicles would have to detour 21 miles to 25 miles each way to alternative bridge crossings (Exhibit 3-9), which would increase energy consumption from vehicles compared to continued operation of the bridge.

Indirect impacts include upstream activities related to energy production needed for facility signals, lighting, tollbooth operations, and bridge lifts.

Build Alternatives

Energy would be consumed during construction of each of the build alternatives to extract or manufacture materials, transport labor and materials, and operate construction equipment, as well as from vehicle delay caused by construction activities. It is estimated that 959,841 mmBtu would be consumed from construction activities and vehicle delays during construction, approximately 383,936 mmBtu per year. As a direct impact, both build alternatives would require annual energy consumption from routine maintenance (63 mmBtu), which would be slightly greater than the No Action Alternative (50 mmBtu). The replacement bridge would not substantially increase motor vehicle capacity as compared to the No Action Alternative, and it is not expected to substantially impact inter-city vehicle demand or routing of longer distance trips crossing the Columbia River at other bridges compared to the No Action Alternative. Both build alternatives would provide a shared use path, introducing a non-motorized travel option across the Columbia River and, thereby, potentially reducing energy consumption.

Forecasted traffic volumes for 2045 would be the same regardless of alternative. While average daily travel would increase over the next few decades, requiring greater fuel consumption, this increase could be offset by continuous improvements in fuel economy resulting from the U.S. EPA national control programs. The replacement bridge is expected to have a 35-mph posted speed compared to the 25-mph speed on the existing bridge, which would increase traffic flow and in-turn reduce operational energy use compared to the No Action Alternative.

Indirect impacts would include activities related to electricity production and acquiring the materials used to construct the replacement bridge. Indirect impacts from electricity production would include the extraction, production, and

transportation of fuels used to generate electricity. Indirect impacts from construction would account for raw material extraction, raw materials transportation, materials production, and chemical reactions from materials production.

Exhibit 3-40 summarizes vegetation and wetland impacts by alternative.

Exhibit 3-40. Summary of Impacts and Benefits to Energy Resources

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Construction Impacts	• None	• 959,841 mmBtu from construction activities and vehicle delays during construction, approximately 383,936 mmBtu per year	
Direct Impacts and Benefits	• 50 mmBtu from routine maintenance • Decreased energy consumption in design year 2045 from vehicle fuels • Continued energy spent to raise/lower lift span	• 63 mmBtu from routine maintenance • Decreased energy consumption in design year 2045 from improved vehicle fuel standards under U.S. EPA national control programs • Operational energy reduced compared to No Action Alternative due to increased speed limit for build alternatives • Greater opportunities for non-motorized travel on shared path of replacement bridge	
Indirect Impacts	• Potential for an increase in energy consumption required to process additional fuel needed by vehicles finding alternative routes if the bridge closed	• Upstream energy consumption for raw materials extraction, transportation, and productions is included in direct construction impacts • Decreased upstream energy consumption from fuel production activities in design year 2045 from improved vehicle fuel standards under U.S. EPA national control programs	

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to energy resources:

» Contractors would be required to minimize dust and air pollutant emissions. Potential control measures are included throughout the WSDOT standard specifications and ODOT standard specifications Section 290. These control measures include vehicle and equipment idling limitations, which would reduce energy usage as well.

Long-Term Impacts

No mitigation to long-term impacts is proposed.

Conservation of energy could be achieved in facility planning, construction, operation, and maintenance. Conservation could also be applied to recycling pavements, signals, and other hardware items, using indigenous plants for landscaping, and applying BMPs in maintenance. Other measures that could be applied include using light emitting diode (LED) lamps for light, solar powered lighting, promoting carpools, vanpools, buses, and bicycle projects.

Additional detail on energy resources is provided in the Energy Technical Report (Appendix D).

3.16. Vegetation and Wetlands

Existing Conditions

Vegetation in the southeast area of the API.

The API includes vegetated areas interspersed with development, with the Washington side less developed than the Oregon side. Vegetation within the API consists of native and non-native plants. Rare, threatened or endangered plant species are regulated by national, state, and local laws. The ESA protects plants on the federal level, and both Washington and Oregon maintain protected species lists at the state level. Critical areas ordinances protect certain plants at the local level in Washington.

On the Washington side of the API, ecosystems include the North Pacific Lowland Riparian Forest and Shrubland and North Pacific Oak Woodland (Rocchio and Crawford 2015) (Exhibit 3-41). Immediately next to the existing bridge approach in Washington, there is a 59-inch diameter Oregon white oak that is considered a heritage tree protected by the City of White Salmon's critical areas ordinance. The Oregon side of the API contains little native vegetation because of its intensively developed character. During a plant survey conducted in July 2019, no rare plants or other special status plants were found within the Project's API. Databases maintained by the USFS and USFWS do not identify threatened or endangered species within the Project's footprint.

A wetland delineation identified three wetlands (A, B, and C) and several potentially regulated ditches on the Washington side during a 2019 field survey (Exhibit 3-42). Wetlands on the Washington side are protected by the City of White Salmon critical areas ordinance and are categorized by their quality: Category I wetlands are the highest quality and Category IV are the lowest. Wetlands in Washington are required to have vegetated buffers to protect ecological functions with buffer widths determined based on their quality. Wetland A is located west of the existing bridge approach ramp and south of SR 14 and is a Category III wetland with a required 80-foot buffer. Wetlands B and C are located north of SR 14 proximate to the bridge approach ramp and are Category IV wetlands with 50-foot buffers. The Clean Water Act also regulates wetlands that are determined to be waters of the U.S.; the USACE requires permits for projects that cause impacts to waters of the U.S. The USACE has not yet determined whether the ditches would be regulated as wetlands; the determination would be completed during the project permitting phase.

Project wetland specialists identified one area with wetland vegetation on the Oregon side within the ODOT stormwater facility north of the I-84 westbound on-ramp. Stormwater facilities are not regulated as wetlands under the Clean Water Act or by the State of Oregon Removal-Fill Law when constructed in upland areas.

Areas landward 200 feet of the Columbia River are designated as a "shoreline of statewide significance" and development activities including grading, filling, vegetation clearing, and bridge construction are regulated under the City of White Salmon's Shoreline Master Program (City of White Salmon 2017).

Exhibit 3-41. Vegetative Communities Found in the API

Exhibit 3-42. Wetlands in the API

Project Impacts and Benefits

No Action Alternative

Since there would not be any construction or removal of the existing bridge, there would be no construction, direct, or indirect impacts to vegetation and wetlands from the No Action Alternative.

Build Alternatives

The build alternatives would result in construction, direct, and indirect impacts and benefits to vegetation and wetlands. Impacts and benefits for Alternative EC-2 and Alternative EC-3 would be generally similar because the alignments and APIs of these alternatives are similar.

During construction, the build alternatives would temporarily affect vegetation, soils, and wetlands including removing vegetation associated with construction activities on the Washington side near the SR 14 intersection and in a 70-foot wide construction zone to allow for construction equipment access (Exhibit 3-43 and Exhibit 3-44). Removal of Oregon white oaks that could qualify as a WDFW priority habitat would occur; Alternative EC-3 would also remove the large, 59-inch oak. The oaks provide some value for birds for nesting and foraging opportunities for squirrels and other mammals, but because they are surrounded by roads and a railroad their habitat value is diminished. Impacts to the oaks would, nonetheless, be compensated for in accordance with the City of White Salmon's critical areas ordinance requirements. Alternative EC-2 would remove a total of 3.32 acres of vegetation, including 3.18 acres of Lowland Riparian Forest and 0.14 acres of North Pacific Oak Woodland. Alternative EC-3 would remove a total of 4.48 acres of vegetation, including 3.50 acres of Lowland Riparian Forest and 0.43 acres of North Pacific Oak Woodland. Nearly all vegetation removed would be on the Washington side and up to a third would be in the City of White Salmon's shoreline jurisdiction; removal would need to comply with White Salmon's Shoreline Master Program. Vegetation, wetlands, potentially regulated ditches, and their buffers temporarily disturbed during construction would be restored with native plants.

Exhibit 3-43. Wetland Resources Impacted by Preferred Alternative EC-2

Exhibit 3-44. Wetlands Impacted by Alternative EC-3

Direct impacts from Alternative EC-2 and Alternative EC-3 would permanently remove 2.32 acres and 0.94 acre of vegetation, respectively, for the replacement bridge abutment, retaining walls, and stormwater facility. Most removed vegetation would be in Washington. Less vegetation would be permanently removed under Alternative EC-3 since the area east of the existing bridge and north of the BNSF Railway is developed and was previously cleared. On the Oregon side, Alternative EC-2 and Alternative EC-3 would remove a row of Douglas-fir, pine, juniper, landscape trees, and mowed vegetation totaling 0.75 acres west of the existing bridge that currently provides very little habitat value. Direct (permanent) wetland impacts for Alternative EC-2 and Alternative EC-3 include partially filling wetland A and its buffer, and completely filling wetlands B, and C to accommodate bridge infrastructure including abutments, retaining walls, and improvements to SR 14 for the roundabout intersection. Alternative EC-2 would directly fill 0.10 acre of wetlands and affect 0.16 acre of wetland buffer; Alternative EC-3 would fill 0.10 acre of wetland and affect 0.07 acre of buffer.

Indirect impacts to vegetation under both build alternatives would include shading of vegetation under the bridge and intercepting rainwater that would otherwise infiltrate or be intercepted by vegetation. Shading and intercepted rainfall could reduce plant growth and or result in shade-tolerant species.

Exhibit 3-45 summarizes vegetation and wetland impacts by alternative.

Exhibit 3-45. Summary of Impacts to Vegetation and Wetland Resources

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Vegetation	• None	• 3.32 acres of vegetation removal during construction, including 3.18 acres of riparian forest and 0.14 acre of oak woodlands • 2.32 acres of permanent vegetation impacts	• 4.48 acres of vegetation removal during construction, including 3.50 acres of riparian forest and 0.43 acre of oak woodlands and removal of heritage oak • 0.94 acre of permanent vegetation impacts
Wetlands	• None	• Potential temporary impacts to wetlands, potentially regulated ditches, and wetland buffers	
		• 0.10 acre of permanent wetland impact • 0.16 acre of wetland buffer impact	• 0.10 acre of permanent wetland impacts • 0.07 acre of wetland buffer impacts
Indirect Impacts	• None	• Shading of vegetation from replacement bridge deck • Interception of rainwater	

Note: Acreages are approximate

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to vegetation and wetland resources:

- A temporary ESCP would be prepared prior to the start of construction and adhered to throughout the process.
- Construction contract documents would specify that construction activities must comply with local and state regulation.
- Minimize vegetation removal by setting clearing and grading limits using high visibility construction fencing.
- Minimize grubbing and soil disturbance where not necessary to place permanent foundations.
- Till or loosen soil compacted by construction equipment before replanting.
- A tree survey and mitigation plan would be prepared prior to construction documenting tree species, size, and recommended mitigation plantings to compensate for trees removed.
- Revegetate areas temporarily disturbed by construction activities with appropriate native species.
- Revegetate the existing bridge alignment in Washington following removal of the existing bridge.
- Consider the use of retaining walls to the extent practicable to reduce the amount of vegetation clearing and/or wetland impacts.

Long-Term Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate long-term impacts to vegetation and wetland resources:

- The Project would comply with all applicable regulatory and permitting requirements pertaining to wetland and shoreline vegetation impacts.
- Shoreline vegetation on the Washington banks of the Columbia River is regulated by the City of White Salmon under its Shoreline Master Program. Since the Project is located within 200-feet of a shoreline of statewide significance it would trigger the no net loss of shoreline functions approval criteria. Shoreline vegetation would be compensated on-site through enhancements if practicable.
- Compensatory wetland mitigation would meet the federal no net loss of wetland acreage requirement.
- Any regulated ditches impacted would be restored in place or new ditches created adjacent to road improvements.
- In the API in Washington, wetland buffers are regulated by the City of White Salmon under its critical areas ordinance (WSMC 18.10.700). Compensatory mitigation would be required to address affected functions by achieving a functional equivalency or improvement and providing a similar wetland or buffer function. Approval criteria require no net loss of functions or values for any activity impacting a critical area.

Additional detail on vegetation and wetland resources is provided in the Vegetation and Wetland Technical Report (Appendix O).

3.17. Fish and Wildlife

Existing Conditions

The API consists of aquatic habitats of the Columbia River and nearby terrestrial habitats on both the Washington and Oregon sides of the river.

Aquatic Habitat and Species

The Columbia River provides habitat for a variety of aquatic organisms. However, habitat conditions in the river have been substantially altered from their natural condition through development throughout the watershed. Hydroelectric dams on the Columbia River limit anadromous fish migration and affect resident fish habitat. These dam impoundments reduce flow rates, allow settling of sediments, and control water level elevations as compared to historical free-flowing conditions of the river. The Columbia River at the location of the Project is an impoundment behind the Bonneville Dam, which is located approximately 20 miles west of the existing bridge.

Photo source: Morgan Bond, University of Washington

Chinook salmon use the Columbia River as a migratory route.

The portions of the Columbia River that are within the API are used by several native fish species, including both common species, and species with special regulatory status at either the state or federal level (Exhibit 3-46). These include populations of anadromous salmon, steelhead, and bull trout, which are listed under the federal ESA, and Pacific Lamprey, which is a Washington State priority species. Additional native fish species include white sturgeon, river lamprey, northern pikeminnow, and rainbow trout, among others. Non-native fish species are also common within the waters of the API, and include largemouth bass, smallmouth bass, crappies, and walleye. No invasive aquatic species are known or expected to present in this portion of the Columbia River.

DEFINITIONS

Benthic Habitat: Habitat associated with or occurring on the bottom of a body of water.

Over-Water Coverage: Structures that cast shading onto water.

Shallow-Water Transition Zone: Environments situated between land and deep water.

The reach of the river at the location of the Project serves as a migratory route for salmon, steelhead, and bull trout, between spawning and rearing areas, for foraging, and for outmigration to the Pacific Ocean. The portion of the Lower Columbia River that is downstream of the Bonneville dam within the API also supports several additional special status fish species, including Lower Columbia River and Willamette River stocks of pacific salmon and steelhead, pacific eulachon, and North American green sturgeon. While these species do not occur within the immediate vicinity of the API, they have been included in this document because of the potential for effects associated with changes to the stormwater management associated with the Project.

NOAA Fisheries is responsible for administering the ESA for anadromous salmon and steelhead, and the USFWS administers the ESA for bull trout. The Magnuson-Stevens Act governs impacts to domestic fisheries and fish species; the Project would need to account for potential impacts to fish and fish habitats within the Columbia River. (See Appendix E, Fish and Wildlife Technical Report for more information regarding native fish species.)

Nearshore habitat on the Oregon side at the existing bridge is armored with riprap to prevent erosion, and the resulting nearshore shallow-water transition zone is relatively narrow. The Hood River enters the Columbia River approximately 1,500 feet downstream of the existing bridge. There is a sandbar that has formed at this location that provides a more gradual shallow-water nearshore transition zone. The White Salmon River enters the Columbia River approximately 1.5 miles downstream of the existing bridge on the Washington side of the river. Both the Hood River and White Salmon River support populations of salmon, steelhead, bull trout, and lamprey, and provide habitat for both migrating adults and out-migrating and rearing juveniles.

Exhibit 3-46. Special Status Fish Species with Potential Presence in Project API

Species Name			Federal Status	Oregon Status	Washington Status	Critical Habitat
Common Name	Scientific Name	ESU or DPS*				
Chinook salmon	(*Oncorhynchus tshawytscha*)	Lower Columbia River (LCR) ESU	Threatened	Sensitive	Candidate	Designated
		Upper Willamette River (UWR) ESU	Threatened	Sensitive	Not listed	Designated
		Upper Columbia River (UCR) Spring-Run ESU	Endangered	Sensitive	Candidate	Designated
		Snake River Spring/ Summer-Run ESU	Threatened	Threatened	Candidate	Designated
		Snake River Fall-Run ESU	Threatened	Threatened	Candidate	Designated
Chum salmon	(*Oncorhynchus keta*)	Columbia River ESU	Threatened	Sensitive	Candidate	Designated
Coho salmon	(*Oncorhynchus kisutch*)	LCR ESU	Threatened	Endangered	Not listed	Designated
Sockeye salmon	(*Oncorhynchus nerka*)	Snake River ESU	Endangered	Not listed	Candidate	Designated
Steelhead salmon	(*Oncorhynchus mykiss*)	LCR DPS	Threatened	Sensitive	Candidate	Designated
		UWR DPS	Threatened	Sensitive	Not listed	Designated
		Middle Columbia River DPS	Threatened	Sensitive	Candidate	Designated
		UCR DPS	Endangered	Not listed	Candidate	Designated
		Snake River Basin DPS	Threatened	Sensitive	Candidate	Designated
Bull trout	(*Salvelinus confluentus*)	Columbia River DPS	Threatened	Sensitive	Candidate	Designated
Pacific eulachon (smelt)	(*Thaleichthys pacificus*)	Southern DPS	Threatened	Not listed	Candidate	Designated
North American green sturgeon	(*Acipenser medirostris*)	Southern DPS	Threatened	Sensitive	Not listed	Designated
Pacific Lamprey	(*Lampetra tridentata*)	N/A	Not listed	Not listed	Not listed**	N/A

** ESU = evolutionarily significant unit; DPS = distinct population segment*

*** Pacific Lamprey is not a federal- or state-listed species in Oregon or Washington, but is identified as a WDFW Priority species*

Terrestrial Habitat and Species

A terraced bank rising from the Columbia River to an elevation of approximately 600 feet characterizes the north side of the Columbia River in the City of White Salmon. Nearshore aquatic habitat on the Washington side at the existing bridge consists of sandy shoreline and bedrock outcrops. Wetland habitats on the Washington side provide potentially suitable habitat for a variety of species; however, given the disturbed nature of the wetlands and the degree of habitat fragmentation, the degree of wildlife habitat function is limited. Oregon white oak woodlands and oak/pine mixed forest priority habitats (designated by WDFW) are located along the north shore of the Columbia River and among the bluffs along the City of White Salmon and City of Bingen. A small stand of Oregon white oak woodland is mapped within the API, including the large white oak tree just east of the existing bridge. Vegetation in this area is also encumbered by invasive species. Other priority habitats including cliffs/bluffs, and talus slopes, are also present on the steep bluffs north of SR 14 within the API. In general, these habitats provide potentially suitable habitat for terrestrial species and birds that are accustomed to relatively high levels of human activity.

Terrestrial habitats on the Oregon side of the API are generally of limited quality and function, as these areas have been substantially altered from their natural condition by developed infrastructure. Nevertheless, the terrestrial portions of the API provide potentially suitable habitat for a variety of wildlife species including both common species, and those with special regulatory status. Terrestrial wildlife species that are present within the API include a variety of species that are adapted to and can tolerate a wide range of habitat conditions and are conditioned to living in developed and high-traffic environments (e.g., ground squirrels, rabbits, opossum, raccoons, coyote, various rodents, etc.). In addition to these terrestrial mammals, the forested riparian buffer provides potentially suitable seasonal foraging habitat for beaver and deer, and a variety of species of native bats. Western gray squirrel has been documented within forested habitats in the vicinity of the bridge, and mule and black-tailed deer are regularly documented within the API. Potentially suitable habitat for California mountain kingsnake is also present within the API.

Forested riparian habitats also provide habitat for a variety of resident and migratory birds, including a variety of songbirds, shorebirds, and raptors including bald eagles, peregrine falcon, osprey, and red-tailed hawk. Aquatic and nearshore habitats also provide foraging habitat for a variety of common shorebirds (including great blue heron, Caspian terns, and double-crested cormorants), and a variety of common waterfowl (mallard ducks, pintail, wigeon, merganser, gadwalls, green-winged teal, and Canada goose). The USFWS is responsible for administering the ESA for terrestrial species. Portions of the API do provide potentially suitable habitat for some species with special regulatory status in either Washington or Oregon (Exhibit 3-47); however, no ESA-listed terrestrial species are expected to occur within the API. The Project would be required to comply with the Migratory Bird Treaty Act (MBTA), which protects migratory birds and their habitats from human impacts. Migratory birds likely use the API as foraging habitat and could also nest within forested areas. Raptors including peregrine falcons and bald eagles could also forage within the vicinity but there are no documented nests within the API. The Project is not anticipated to result in a take of migratory birds or bald eagles under the ESA and therefore USFWS permits for these species are not required.

Exhibit 3-47. Special Status Terrestrial Species with Suitable Habitat in Project API

Species Name	Scientific Name	Federal Status	Oregon Status	Washington Status	Critical Habitat Designation
Mammals					
Fisher	*Pekania pennanti*	Proposed	Sensitive	Endangered	N/A
Gray wolf	*Canis lupus*	Endangered*	Not listed	Endangered	Designated
North American wolverine	*Gulo gulo luscus*	Candidate	Threatened	Candidate	N/A
Western gray squirrel	*Sciurus griseus*	Not listed	Sensitive	Threatened	N/A
Mule and black-tailed deer	*Odocoileus hemionus*	Not listed	Not listed	Priority species	N/A
Washington ground squirrel	*Urocitellus washingtoni*	Not listed	Endangered	Candidate	N/A
Birds					
Northern Spotted Owl	*Strix oxxidentalis caurina*	Threatened	Threatened	Endangered	Designated
Yellow billed cuckoo	*Coccyzus americanus*	Threatened	Not listed	Endangered	Proposed
Vaux's swift	*Chaetura vauxi*	Not listed	Not listed	Candidate	N/A
Bald eagle	*Haliaeetus leucocephalus*	Species of concern	Not listed	Not listed	N/A
Peregrine falcon	*Falco peregrinus*	Species of concern	Sensitive	Not listed	N/A
Western grebe	*Aechmophorus occidentalis*	Not listed	Not listed	Candidate	N/A
Amphibians and Reptiles					
California mountain kingsnake	*Lampropeltis zonata*	Not listed	Sensitive	Candidate	N/A
Oregon spotted frog	*Rana pretiosa*	Threatened	Sensitive	Endangered	Designated
Western pond turtle	*Actinemys marmorata*	Not listed	Sensitive	Endangered	N/A

** The gray wolf is protected as endangered under the authority of the federal ESA in Oregon west of highways US 395, OR 78, and US 95 and in Washington west of highways US 97, SR 17, and US 395. These highways are in eastern Oregon and Washington, approximately 100 miles east of the API; thus, the gray wolf is protected as an endangered species in the API.*

Project Impacts and Benefits

No Action Alternative

The No Action Alternative would maintain the current level of impacts to aquatic fish and wildlife species. The current operation of the bridge would continue to impact aquatic fish and wildlife species through exposure to contaminants via the lack of stormwater treatment and weathering of contaminated paint. Under the No Action Alternative, roadway stormwater and spills would continue to discharge directly into the Columbia River, due to the open steel grating of the existing bridge deck. Displacement of the existing benthic habitat and existing overwater coverage at the existing bridge site would continue. In addition, the existing bridge has a greater over-water lighting impact .

Under the No Action Alternative, the existing bridge would continue to deteriorate, and become less safe. This alternative could, therefore, result in impacts to fish and wildlife species and habitats in the immediate vicinity of the bridge and downstream aquatic species and habitats in the case of a catastrophic event that would cause the bridge to collapse into the river.

Build Alternatives

Aquatic Habitat Impacts

Construction of a replacement bridge would result in both temporary and permanent impacts to aquatic habitats within the API. Construction of the Project would require the installation of temporary in-water and over-water work structures including temporary work bridges, temporary piles, cofferdams, drilled shaft casings, and barges. These structures would temporarily displace benthic habitat and temporarily increase overwater shading that would temporarily affect habitat suitability during construction. (See Appendix E, Fish and Wildlife Technical Report, for more detail on impacts to fish and wildlife from the build alternatives.)

The existing bridge would remain in place until the replacement bridge is constructed and operational. Construction of the replacement bridge is anticipated to occur over 3 years; thus, removal of the existing bridge would begin in the fourth year of construction activities. Demolition of the existing bridge would include dismantling of the structure and removal of the in-water foundations via barges and/or temporary work platforms and then transported off-site and disposed of at an upland location. Once foundations have been removed, and all debris has been captured, the substrate would be naturally restored with surrounding sediments. Removing the old foundations from the river would temporarily disturb benthic sediments, could result in temporarily elevated turbidity or pH locally, and present a potential for debris or other deleterious materials to enter the water. Demolition and removal of the existing bridge would be conducted consistent with the impact minimization BMPs described below, to further reduce the potential for impacts to ESA-listed species, non-special status fish species such as white sturgeon, river lamprey, bass, walleye, and rainbow trout, and/or critical habitats to these species.

The replacement bridge under both build alternatives would include the permanent installation of bridge piles and footing that would result in the permanent loss of benthic habitat within the Columbia River. However, the replacement bridge, under both build alternatives, would have fewer in-water piers than the existing bridge, and the removal of the existing bridge and associated riprap armoring would result in a net reduction in permanent impacts to benthic habitat in the API, as portrayed in Exhibit 3-48.

Fill placement within the floodplain can affect aquatic habitat suitability by affecting peak and base flow conditions and by altering hydrodynamic conditions. The extent of functional floodplain habitat below this elevation within the API is relatively limited given the degree of streambank armoring on the Oregon side of the river and the rapid transition to upland riparian habitat on the Washington side of the river. The Project would result in the installation of approximately 8,449 cubic yards of material below the +90.4-foot 100-year floodplain elevation and removal of approximately 13,716 cubic yards of material from the existing bridge, resulting in a net removal of fill material from within the floodplain. This removal would represent a small functional improvement to floodplain and hydrodynamic function at the site; however, given the limited extent of floodplain at the Project site and the highly managed nature of the water levels within the Bonneville pool, the extent of the improvement would be relatively minor.

Lighting on the river surface at night has the potential to impact out-migrating juvenile salmon by increasing their visibility to predatory fish species. Construction of the replacement bridge and removal of the existing bridge would occur during prescribed day-time construction hours and within an IWWW that avoids peak run timing for juvenile salmon. Construction lighting on the river surface would be avoided or very minimal and is not expected to have an impact on out-migrating juvenile salmon.

The replacement bridge under both build alternatives would result in an increase in the quantity of over-water coverage and shading compared to the existing bridge, which can create habitat for predatory species and affect habitat suitability for juvenile salmonids and other aquatic species. Several factors can affect the extent of effect of overwater shading. These include the height of the structure, the orientation of the structure, and the density of the piling. The effects to habitat function from overwater shading would be minimal given the height and open structure of the replacement bridge under both build alternatives. The new structure would be elevated between approximately 20 feet and 94 feet above the water's surface over the length of the bridge. This would greatly reduce the potential impact of shading. The existing bridge is approximately 57 feet above the water. The shading created from the replacement bridge would be constantly moving, and the shape and intensity of the shading would not be a solid dark area but a more diffuse irregular shape. This reduces the extent of the functional impact of the shading.

The replacement bridge would also provide a perching habitat for piscivorous (fish-eating) birds, though the extent of impact is expected to be minimal under all build alternatives. It is expected that the replacement bridge would provide comparable or less perching habitat than is available on the existing bridge, which would be removed under all build alternatives. The steel superstructure of the existing bridge would offer greater opportunities for birds to perch undisturbed, whereas the replacement structure would be open, and would have only limited overhead perching opportunities.

Vegetation and Terrestrial Habitat Impacts

Both build alternatives would result in both temporary and permanent impacts to terrestrial habitats including riparian areas, wetlands, and areas vegetated with native and non-native vegetation. Removal of vegetation during construction would temporarily reduce habitat availability for terrestrial species in the API and could also affect adjacent aquatic habitats. Invasive vegetation would also be removed on the Washington side. Under both build alternatives, native vegetation removal and impacts to terrestrial habitat would be limited in nature and scope.

The area that would be cleared on the Oregon side of the river under both build alternatives is situated in a portion of the API that is largely developed and impervious, and habitat functions in this area are currently limited. On the Washington side of the river, terrestrial habitats would be similarly disturbed, but construction would result in impacts to forested riparian habitat and wetland areas.

Permanent impacts to vegetation would result from the construction of the replacement bridge abutment, retaining walls, and stormwater facilities. Vegetation and wetland impacts would be similar under all build alternatives. Removal of vegetation would result in a reduction of habitat availability for terrestrial species in the API for both common species and species with regulatory status. Impacts to forested vegetation could interrupt habitat corridors for terrestrial and avian species and could reduce perching and nesting habitat. Impacts to forested riparian habitat could affect seasonal foraging habitat for beavers, bats, blue herons, ducks, and osprey. Forested vegetation impacts could also reduce cover for terrestrial species, including species with special regulatory status including Western gray squirrels, black-tailed deer, and California kingsnake.

Vegetation removal and impacts to habitat would be limited in nature and scope. Areas that would be cleared are generally situated in areas that are already fragmented and disturbed as a result of prior development, and habitat functions in these areas are currently limited. Areas temporarily disturbed during construction would be restored upon completion of the Project consistent with state and local regulations. Invasive vegetation removed during construction would be replanted with species native and indigenous to the area.

Over-Water and In-Water Work

For both build alternatives, there would be over-water and in-water work that has the potential to cause both temporary and permanent impact to aquatic habitat suitability for fish and wildlife. In-water work could temporarily disturb sediments and increase turbidity. There would also be a slight potential for leaks and spills of fuel, hydraulic fluids, lubricants, and other chemicals from equipment and storage containers. Demolition of the existing bridge could disturb lead paint and/or asbestos. These potential temporary water quality impacts could directly affect fish in the vicinity or could affect fish habitat function by reducing water quality, reducing visibility, and by reducing habitat for species susceptible to predation. These effects would be temporary and localized, and conditions would return to baseline conditions following the completion of construction.

Isolation of in-water work areas such as cofferdams and drilled shaft casings would require fish salvage, to remove fish from isolated work areas. This activity could result in handling or otherwise disturbing fish or other aquatic species within the area being isolated. The potential for these effects would be appropriately minimized through adherence to BMPs for dewatering and fish salvage.

Terrestrial and under-water noise levels would also be temporarily elevated in portions of the API during construction, particularly during impact pile driving. Elevated underwater noise from impact pile driving could result in impacts to fish and other aquatic species ranging from behavioral disturbance, to injury, or mortality. Elevated terrestrial noise would not result in any injury of any terrestrial or avian species but could result in disturbance.

The Project has been designed to minimize the extent of impacts resulting from pile installation activities by using a vibratory hammer to advance the piles to the extent practicable and limiting impact hammer use to finishing the installation. An underwater bubble curtain or similarly effective noise attenuation device would also be used during all impact pile installation to reduce the effects from underwater noise. In addition, impact and vibratory pile installation would be conducted within the approved in-water work period. The number of impact pile strikes is also limited under both build alternatives to reduce the cumulative effect of elevated underwater noise, and further reduce effects to fish.

Stormwater Treatment

Stormwater runoff from roads conveys a number of pollutants to surface water bodies, sometimes at concentrations that are toxic to fish. The existing bridge deck is approximately 1.9 acres in size and receives no stormwater runoff control or water quality treatment. Currently, any precipitation that hits the bridge deck passes directly to the aquatic environment untreated.

The Project, under all build alternatives, would create new impervious surface, which would generate stormwater pollutants. All build Alternatives would also provide water quality treatment for new and rebuilt impervious surface. All build alternatives would also remove the existing bridge, which would remove a potentially significant point source of untreated stormwater. For these reasons, it is expected that the proposed stormwater treatment scenario under all build alternatives would result in a net benefit to water quality in the API. However, stormwater treatment facilities can be overwhelmed during major storm events, and in these conditions untreated stormwater could discharge to the river, which could affect fish or other aquatic species.

Indirect Impacts and Benefits

Potential indirect benefits from the replacement bridge that could affect fish and wildlife include reduced bridge lighting and improved spill containment.

The net effect to fish and wildlife habitat function from Project lighting would be largely beneficial. Under all build alternatives, the Project would remove the existing light sources on the existing bridge that currently pass through to the water's surface, and the lighting on the replacement bridge would use directional lighting with shielded luminaries to control glare and to direct light onto the bridge deck to the extent practicable. This would reduce the extent of light spillage onto the waters' surface or into the surrounding environment.

The removal and replacement of the existing grated deck would also remove a pathway for petroleum products, and other hazardous materials, to be discharged directly to the Columbia River in the event of spills or accidents. As described above, the existing bridge deck is grated, and spills that occur on the bridge deck pass directly to the aquatic environment. Under all build alternatives, the bridge deck would be solid, which would allow for capture and treatment of stormwater in the event of a spill or accident. This would have the potential to indirectly benefit habitat conditions for fish and wildlife.

Exhibit 3-48. Summary of Impacts and Benefits to Fish and Wildlife

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Aquatic Habitat Impacts	• No change in existing benthic habitat impact, floodplain fill, overwater coverage, or level of avian predation	• Benthic Impacts: o 0.48 acres temporary o -0.54 acres net permanent (restoration) • Floodplain Fill o -0.12 acres of net fill removal • Overwater shading: o 4.17 acres (temporary) o 3.45 acres (net new permanent) • Reduced avian predation	• Benthic Impacts: o 0.48 acres temporary o -0.54 acres net permanent (restoration) • Floodplain Fill o -0.12 acres net fill removal • Overwater shading: o 4.17 acres (temporary) o 3.49 acres (net new permanent) • Reduced avian predation
Vegetation and Terrestrial Habitat Impacts	• No new vegetation or terrestrial habitat impacts	• Vegetation Impacts: o 3.32 acres (temporary) o 2.32 acres (permanent)	• Vegetation Impacts: o 4.48 acres (temporary) o 0.94 acres (permanent)
Over-water and In-water Work Impacts	• None	• Temporary water quality impacts during construction • Up to 6,000 impact strikes/day (restricted to work window) • Fish salvage activities during work area isolation (restricted to work window)	
Stormwater Impacts	• No change in level of stormwater treatment • Highest pollutant loading alternative	• Water quality treatment for all contributing impervious areas • Reduced pollutant loading and net water quality benefit.	
Indirect Impacts and Benefits	• Highest over-water lighting impact • Continued risk of spills discharging to the Columbia River	• Reduced over-water lighting benefit • Improved spill containment benefit	

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, and/or mitigate construction impacts to fish and wildlife:

General Measures

- All work would be performed according to the requirements and conditions of the regulatory permits issued by federal, state, and local governments.
- A state DOT inspector would be present on site during construction to document consistency with contract and permit requirements.
- The contractor would be required to prepare a Water Quality Protection and Monitoring Plan for conducting water quality monitoring, to satisfy the monitoring and reporting requirements of the 401 Water Quality Certifications that are ultimately issued for the project.
- Work barges would not be allowed to ground out.
- Impacts to MBTA species would be avoided by limiting vegetation removal to outside of the nesting window (March 1 to August 31) when practicable, and/or by conducting nesting surveys as needed to document compliance with MBTA.

Spill Prevention and Pollution Control Measures

- The contractor would be required to prepare and abide by Spill Prevention, Control, and Countermeasures Plan and Pollution Control Plans, that include proactive measures for spill prevention as well as spill response methodologies.
- Applicable spill response equipment and material would be maintained at the job site.
- With the exception of barges and stationary large equipment operating from barges or work platforms, equipment would be fueled and maintained at least 150 feet from the Columbia River using secondary containment to minimize potential for spills or leaks entering the waterway.
- All equipment to be used for construction activities would be cleaned and inspected prior to arriving at the Project site, to ensure no potentially hazardous materials are exposed, no leaks are present, it is free of any aquatic or terrestrial invasive species, and the equipment is functioning properly.
- Any equipment operating in the water would use only vegetable-based oils in hydraulic lines.
- Process water generated on site during construction would be contained and treated to meet applicable water quality standards before entering or re-entering surface waters.
- No paving, chip sealing, or stripe painting would occur during periods of rain or wet weather.
- Staging and temporary access areas would be located whenever practical on areas already covered by impervious surface.

Erosion and Sediment Control Measures

- The contractor would be required to prepare a temporary ESCP to be implemented during Project construction to minimize impacts associated with clearing, vegetation removal, grading, filling, compaction, or excavation
- Clearing limits would be delineated with orange barrier fencing wherever clearing is proposed in or adjacent to a stream/wetland or its buffer and silt fence would be installed as needed to protect surface waters and other critical areas.
- ESCP measures would be inspected on a weekly basis, and maintained and repaired consistent with ODOT requirements
- All exposed soils would be stabilized as directed in measures prescribed in the temporary ESCP.
- Where site conditions support vegetative growth, native vegetation indigenous to the location will be planted in areas temporarily disturbed by construction activities.

Pile Driving and Removal Measures

- A vibratory hammer would be used to drive steel piles to the extent possible, to minimize noise levels.
- A bubble curtain or other similarly effective noise attenuation device would be employed during all impact pile proofing or installation.
- Pile installation would be conducted within the IWWW for the Project (October 1 - March 15).
- A hydroacoustic monitoring plan would be developed and implemented to confirm the effectiveness of the bubble curtain.
- Temporary piles would be removed with a vibratory hammer.
- Piles that are not in an active construction area and are in place 6 months or longer would have cones or other anti-perching devices installed to discourage perching by piscivorous birds.

Fish Capture and Release Measures

- A qualified fishery biologist would conduct and supervise fish capture and release activity to minimize risk of injury to fish.
- A fish salvage report would be prepared and submitted to NOAA Fisheries, USFWS, ODFW, and WDFW following the completion of each in-water work season.
- Attempts to seine and/or net fish would precede the use of electrofishing equipment.
- If electrofishing must be used, it would be conducted consistent with NOAA Fisheries “Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act” (NOAA Fisheries 2000), or most recent version.

Work Area Lighting Measures

- If temporary lighting is required, contractor would use directional lighting with shielded luminaries to control glare and direct light onto work area; not surface waters.

Long-Term Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate long-term impacts to fish and wildlife:

- Long-term impacts to vegetation and wildlife habitat would be addressed through replanting temporarily disturbed areas with native vegetation, consistent with regulatory requirements.
- The Project would be operated and maintained consistent with applicable federal, state, and local regulatory and permitting requirements.
- Aquatic habitats within navigable waters are subject to USACE requirements for compensatory mitigation (33 CFR Part 332 and 40 CFR Part 230, subpart. J), which requires that the final design and layout of the replacement bridge avoid and minimize the extent of habitat impacts to aquatic habitat to the extent practicable. The Project would comply with these requirements.
- Long-term impacts to water quality from stormwater would be minimized by providing water quality treatment for all new and rebuilt contributing impervious area, and by removing the existing bridge. Stormwater treatment BMPs would be developed for the Project prior to construction and take into account the practices set forth in ODOT and WSDOT standard specifications (00280 Erosion and Sediment Control [ODOT] and 8-01 Erosion Control and Water Pollution Control [WSDOT]). BMPs would be implemented during construction to eliminate the off-site transport of sediment-laden stormwater.
- Impacts to federally-listed species and critical habitats listed under the ESA would be avoided and minimized through adherence to the terms and conditions of the Biological Opinions from NOAA Fisheries and USFWS. A Biological Opinion will be included in Appendix B of the Final EIS/ROD once ESA Section 7 consultation is complete.
- Shoreline and freshwater habitat on the Washington banks are regulated by the City of White Salmon under its Shoreline Master Program. Projects located within 200-feet of a shoreline of statewide significance must meet the no net loss of shoreline functions approval criteria. Impacts to fish and wildlife habitat would be compensated on-site through enhancements if practicable or off-site if necessary. The Project would comply with these requirements.
- In the API in Washington, fish and wildlife conservation areas are regulated by the City of White Salmon under its critical areas ordinance (WSMC 18.10.300). Compensatory mitigation is required to address affected functions by achieving a functional equivalency or improvement and providing similar habitat function. Approval criteria require no net loss of functions or values for any activity impacting a critical area. The Project would comply with these requirements.
- Under the regulation of the Shoreline Master Program and the Critical Areas Ordinance, the Project would be subject to requirements to avoid, minimize, or mitigate for impacts to critical areas, including aquatic habitats, wetlands, and fish and wildlife habitat conservation areas. The Project would comply with these requirements.

Additional detail on fish and wildlife resources is provided in the Fish and Wildlife Technical Report (Appendix E).

3.18. Air Quality and Greenhouse Gases

Existing Conditions

Air quality in the Columbia River Gorge should improve with the implementation of standards relating to vehicle fuel economy and emissions.

Cutting through both the Cascade Range and the Coast Range, the Columbia River offers low-elevation passage of marine air from the Pacific Ocean. As a result, temperatures are generally moderate in the area of the Columbia River Gorge where the existing bridge is located in both summer and winter. Continental air occasionally passes in reverse and produces the more extreme (low in winter and high in summer) temperatures in the western valleys. Average annual rainfall in the Columbia River Basin is about 15 inches to 20 inches.

Under the Clean Air Act, the U.S. EPA has established the National Ambient Air Quality Standards (NAAQS), which specify maximum concentrations for carbon monoxide (CO), particulate matter less than 10 micrometers in size (PM_{10}), particulate matter less than 2.5 micrometers in size ($PM_{2.5}$), ozone (O_3), sulfur dioxide (SO_2), lead, and nitrogen dioxide (NO_2). These pollutants are referred to as criteria pollutants. Areas not in NAAQS compliance are deemed nonattainment areas. The API is in attainment for all current NAAQS in both Washington and Oregon as measured by multiple government agency air quality monitors in the area.

In addition to the criteria pollutants, the U.S. EPA also regulates air toxics. Toxic air pollutants are those pollutants known or suspected to cause cancer or other serious health effects. Most air toxics originate from human-made sources, including mobile source air toxics (MSAT) emitted from vehicles. Recent U.S. EPA regulations for vehicle engines and fuels is projected cause overall MSAT emissions to decline substantially over the next several decades. For greenhouse gas (GHG) emissions, the transportation sector (including highways and rail) is the greater contributor of GHGs in Washington and Oregon compared to other sectors (agriculture, industry, electricity production, and residential/commercial buildings).

Project Impacts and Benefits

No Action Alternative

If the bridge were to close in the future when it surpasses its operational life, or if a catastrophic event such as an earthquake or a barge strike occurs prior to the end of its operational life, vehicles would need to detour 21 to 25 miles to an alternative route (Exhibit 3-9), which would cause an increase in vehicle emissions compared to the continued operation of a bridge at its current location. However, there would be no direct impacts to air quality under the No Action Alternative because emissions of most pollutants regulated under NAAQS are expected to be lower than present levels due to federal emission standards, fuel standards, and improved engine technology. Likewise, U.S. EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline substantially over the next several decades, even with an increase in VMT. For direct impacts, 4.0 metric tons of carbon dioxide equivalent (CO_{2e}) annually is estimated from routine maintenance of the existing bridge.

Build Alternatives

Construction-related activities under the build alternatives would result in short-term impacts that include increased particulate matter in the form of fugitive dust, as well as exhaust emissions from material delivery trucks, construction equipment, workers' private vehicles, and any associated traffic delays. Construction impacts to air quality would be short-term in duration and, therefore, would not result in adverse or long-term impacts. During construction, it is anticipated that roughly 70,311 metric tons of CO_{2e} would be emitted throughout the construction duration under the build alternatives from construction equipment and delayed vehicles.

The replacement bridge would not substantially impact air quality during operation. Neither of the build alternatives would substantially increase motor vehicle volumes and would not be expected to substantially impact inter-city vehicle demand or routing of longer distance trips crossing the Columbia River at other bridges. Therefore, the Project has been determined to generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns. For direct impacts, 5.0 metric tons of CO_{2e} annually is estimated from routine maintenance of the build alternatives.

Indirect impacts would include GHG emissions from acquiring the materials used to construct the bridge and associated uses, including raw material extraction, raw materials transportation, materials production, and chemical reactions from materials production. Emissions from these activities are included in the construction estimate of 70,311 metric tons of CO_{2e} for all the build alternatives.

As mentioned, the operation of construction equipment and vehicle delays during construction would result in short-term GHG emissions. Direct and indirect impacts on GHG emissions from the Project would include emissions from yearly routine maintenance, emissions associated with the production of materials used in construction, and emissions from vehicle operations on the roadway. GHG emissions from the Project that are not offset could have minor contributions to long-term atmospheric impacts that contribute to climate change.

These impacts would be partially offset by Project-specific design features. Both build alternatives would provide a shared use path, introducing a non-motorized travel option across the Columbia River and, thereby, potentially reducing GHG emissions from vehicular trips; the Project is expected to improve traffic flow on the bridge due to increased speed on the bridge and at the proposed roundabout at the SR 14 intersection; and construction of the Project would prevent the eventual closure of the existing bridge at the end of its operational life or in the event of a catastrophic event, thus preventing an increase in out of direction travel to cross the Columbia River.

Exhibit 3-49 summarizes air quality and GHG impacts by alternative.

Exhibit 3-49. Summary of Impacts and Benefits to Air Quality Resources

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Construction Impacts	• No criteria pollutant impacts • No GHG impacts	• Temporary criteria pollutant emissions from construction equipment, dust, and vehicle delays during construction • 70,311 metric tons CO_{2e} from construction equipment and delayed vehicles over the construction period	
Direct Impacts and Benefits	• Decreased criteria pollutant emissions in design year 2045 from vehicle exhaust • Decreased MSAT emissions in design year 2045 from vehicle exhaust • 4.0 metric tons CO_{2e} per year from routine maintenance • No new operational GHG impacts	• Decreased criteria pollutant emissions in design year 2045 from vehicle exhaust • Decreased MSAT emissions in design year 2045 from vehicle exhaust • 5 metric tons CO_{2e} per year from routine maintenance • Operational GHGs partially offset by shared use path and improved traffic flow due to the roundabout on SR 14 and speed limit changes on the bridge	
Indirect Impacts	• No criteria pollutant impacts • No MSAT impacts • No GHG impacts	• No criteria pollutant impacts • No MSAT impacts • GHG emitted from bridge materials production (amount included in Construction Impacts) over the construction period	

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

Construction contractors are required to comply with regulations that apply to the state in which the work is being performed. Work performed in Oregon must comply with Division 208 of Oregon Administrative Rules (OAR) 340, which addresses visible emissions and nuisance requirements. Subsection of OAR 340-208 places limits on fugitive dust that causes a nuisance or violates other regulations. Violations of the regulations can result in enforcement action and fines. The regulation provides that the following reasonable precautions be taken to avoid dust emissions (OAR 340-208, Subsection 210):

- Use of water or chemicals, where possible, for the control of dust in the removal of existing buildings or structures, construction operations, the grading of roads or the clearing of land.
- Application of water or other suitable chemicals on unpaved roads, materials stockpiles, and other surfaces which can create airborne dusts.
- Full or partial enclosure of materials stockpiles in cases where application of water or other suitable chemicals are not sufficient to prevent particulate matter from becoming airborne.
- Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials.
- Adequate containment during sandblasting or other similar operations.
- When in motion, always cover open-bodied trucks transporting materials likely to become airborne.
- The prompt removal from paved streets of earth or other material that does or could become airborne.

In addition, contractors are required to implement air pollution control measures that include vehicle and equipment idling limitations and minimize vehicle track-out and fugitive dust. These measures would be documented in the temporary ESCP that the contractor is required to submit prior to the preconstruction conference. To reduce the impact of construction delays on traffic flow and resultant emissions, road or lane closures should be restricted to non-peak traffic periods when possible.

Long-Term Impacts

No mitigation to long-term impacts are proposed.

Additional detail on air quality resources is provided in the Air Quality Technical Report (Appendix A).

3.19. VISUAL

EXISTING CONDITIONS

The Columbia River as viewed from the City of White Salmon with the City of Hood River and Mt. Hood in the background.

The Hood River Bridge spans the Columbia River and is located within the CRGNSA. The CRGNSA was federally-established to protect the scenic, cultural, natural, and recreational resources of the Columbia River Gorge. The mountains on both sides of the Columbia River offer expansive views of the Columbia River Gorge, but also define the limits from which the existing bridge can be seen. Visual resources in the API are characterized by rim-rock bluffs, sloping-forested hills, open farmland, and semi-arid grasslands surrounded by 4,000-foot-high mountains punctuated by the snow-capped 11,250-foot Mt. Hood, 8,366-foot Mt. St. Helens, and 12,280-foot Mt. Adams.

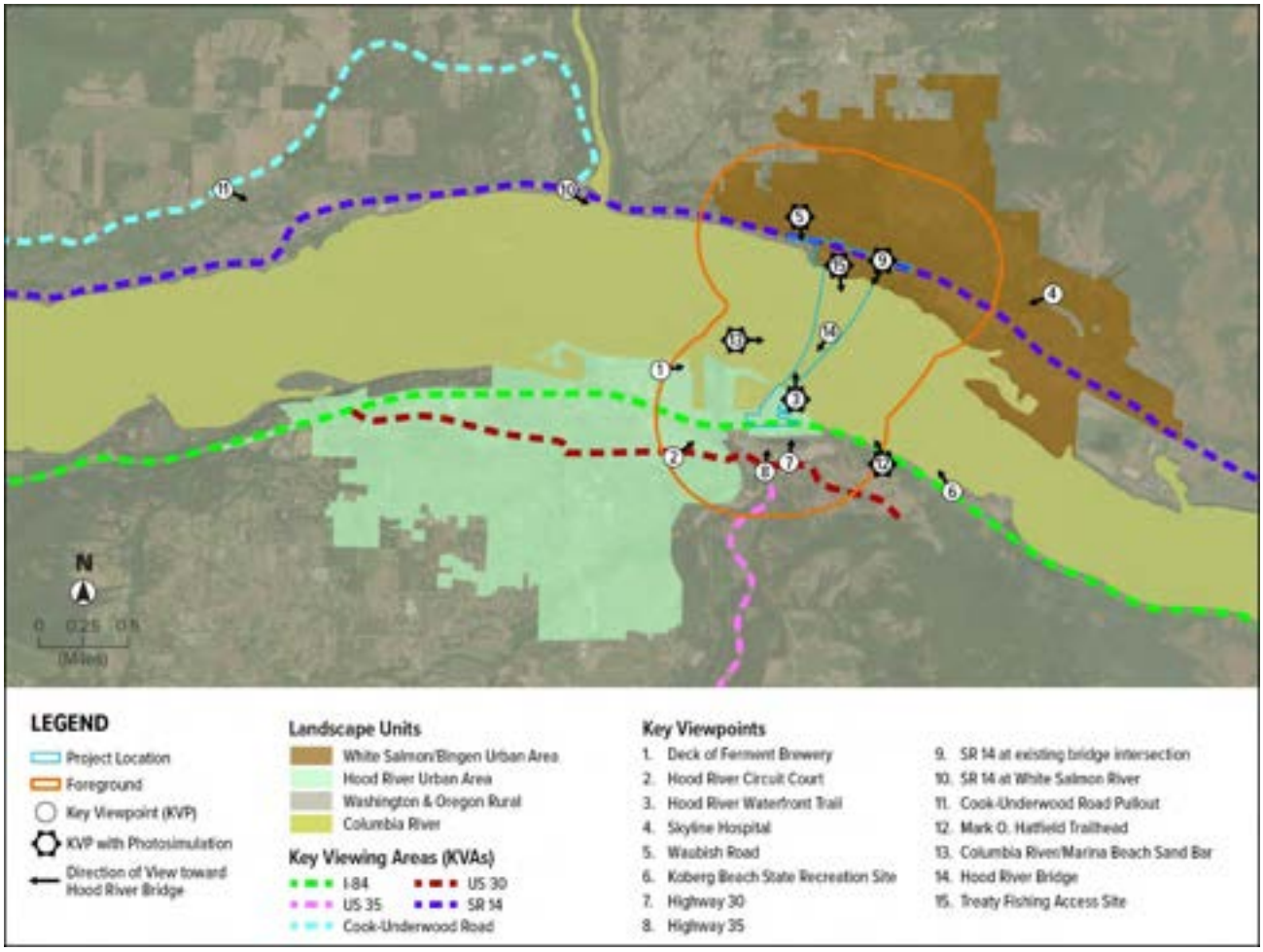
The Project's Visual Impact Assessment Report (Appendix P), completed in compliance with FHWA Guidelines, defined the API for the visual analysis, called the "Area of Visual Effect" (AVE), as an area within 5 miles of the existing bridge. Within the AVE, views of the existing bridge are available at many locations. The AVE is divided into the foreground, middle ground, and background. Changes to the visual environment would be most discernible in the foreground located 0 miles to 0.5 miles from the bridge but would be only somewhat visible in the middle ground located 0.5 mile to 5.0 miles away and would not be discernible in the background. The Visual Impact Assessment Report documented views from eight Key Viewing Areas established in the CRGNSA Management Plan (e.g., I-84, SR 14, Columbia River) and 15 key viewpoints within the AVE including the White Salmon TFAS located on a parcel that borders the existing bridge to the west (Exhibit 3-50) (CRGC 2016).

Within the AVE, the Visual Impact Assessment Report defined 10 geographic areas called "landscape units" sharing similar visual features. The landscape units include urban areas (Hood River and White Salmon), transportation corridors (I-84, OR 30, OR 35, SR 14, and Cook-Underwood Road in Washington), rural landscapes in Washington and Oregon, and the Columbia River. The Visual Impact Assessment Report evaluated the natural, cultural, and Project visual resources in each landscape unit. The landscape units nearest the bridge are the urban areas of Hood River and White Salmon/Bingen characterized by a mix of human-made residential, commercial, civic, institutional, and industrial structures including large forest product and produce storage buildings on the Washington side of the river. Transportation facilities with vehicles, traffic devices, and manmade structures also form part of the immediate visual context of the bridge. The Columbia River with water, rock outcrops, and shoreline vegetation is part of the foreground of the AVE near the existing bridge. Further away from the bridge in the middle and background areas, the rural landscapes of Washington and Oregon dominate with mountain foothills sloped toward the Columbia River with semi-arid vegetation, dispersed residential structures, and agricultural land.

Visual quality is an interaction between the viewer and the environment and depends on what a viewer perceives and their personal preferences and sensitivities. The purpose of the visual impact analysis process is to objectively discern what viewers perceive in the visual environment and how they could be affected by visual changes a project would bring on a short-term and long-term basis. The Visual Impact Assessment Report defined different viewer groups within the AVE. which are categorized as travelers or neighbors. Neighbors are further categorized into residential, recreational, institutional, civic, retail, commercial, industrial, agricultural, and tribal types. Traveler types include pedestrian, bicycling, and motoring. Residential, recreational, and tribal neighbors and pedestrians and bicyclists tend to be most sensitive to visual changes in the environment while work-oriented viewer classes (institutional, civic, retail, commercial, industrial, and agriculture) tend to be focused on their jobs and less sensitive to visual change.

The landscape units and viewer types are important context for assessing changes in visual quality from the Project and viewer sensitivity to these changes.

Exhibit 3-50. Columbia River Gorge National Scenic Area Key Viewing Areas and Project Key Viewpoints



Project Impacts and Benefits

Direct visual impacts resulting from the Project were assessed by multiple criteria: compatibility, viewer sensitivity, and visual quality. Project compatibility includes scale, form, materials, and visual character. Viewer sensitivity depends on a viewer's class (traveler or neighbor) and the likelihood they would notice change in the visual environment. Visual quality of the existing bridge was assessed across three sub-criteria:

- Natural harmony: The viewer's perception of a project's harmony with its natural environment. The natural environment consists of land, water, vegetation, animals, and atmospheric conditions. More specifically, the natural environment in the AVE is made up of sloping forested hills punctuated by snow-capped mountain backdrops, rim-rock bluffs, the waters of the Columbia and Hood rivers, and semi-arid grasslands.
- Cultural order: The viewer's perception of whether a project is orderly or disorderly in the context of its cultural environment. The cultural environment consists of cultural sites, buildings, infrastructure, structures, artifacts, and public art. In the AVE, the cultural environment includes three tribal fishing access sites and one fish processing facility; buildings in the White Salmon, Bingen, and Hood River urban areas; lights; and transportation infrastructure including I-84, OR 30, and OR 35 in Oregon and SR 14 in Washington.
- Coherence of project components: The viewer's perception of whether a project is coherent or incoherent in the context of the project environment. The Project environment consists of pavement and structures, vegetative cover, and ancillary elements such as signage. In the AVE, the existing bridge environment consists of the steel trussed bridge 57 feet above the river with two prominent towers at the centrally-located lift span; the Washington bridge approach and intersection at SR 14 with traffic lights; and a toll booth and more developed urban environment with the buildings of nearby businesses at the Oregon bridge approach.

No Action Alternative

Since there would be no construction and no replacement bridge, there would be no direct changes to visual resources or quality from the continued operation of the bridge in the No Action Alternative. If a catastrophic event such as an earthquake, landslide, or barge or vessel strike occurs, the bridge could be damaged or collapse into the river. Direct impacts to visual resources from a catastrophe could include that the damaged bridge remains in place for months or years, which would negatively impact visual compatibility, viewer sensitivity, and visual quality. If the existing bridge exceeds its operational life and is closed to traffic, there would no longer be light or glare from vehicles crossing the bridge and the bridge itself would not be illuminated and visible at night. Views from the bridge would be eliminated.

Build Alternatives

Both build alternatives (Alternative EC-2 and Alternative EC-3) would largely have the same construction, direct, and indirect impacts on visual resources. During the approximate 6-year construction period, changes to the visual landscape would include: use of construction equipment and signs visible in the AVE; staging areas where equipment and materials may be visible; removal of vegetation concentrated at the northern bridge touchdown to accommodate construction activities; barges, cranes and boats visible in the Columbia River at times; and lighting to illuminate work areas. Staging areas on both sides of the river and construction of the bridge approaches would occur in urban areas where viewers are accustomed to building construction and road maintenance activities. In-water construction activities for bridge piers would include barges and cranes and boats bringing workers to the construction area. Similar equipment would be used to deconstruct the existing bridge. Stationary viewers with long-term views of the area such as residents and recreationists could experience moderate and temporary impacts from construction activities during construction. Columbia River treaty tribes' fishers, residents, and campers at the White Salmon TFAS, could be expected to have higher sensitivity to changes in the visual environment due to the site's close proximity to bridge construction activities including lights illuminating construction areas on land or over the water, construction equipment and materials, and the partially-completed bridge.

Long-term (direct) visual impacts from the build alternatives were evaluated on compatibility, viewer sensitivity, and visual quality.

The visual compatibility assessment looked at project scale, form, materials, and visual character and noted:

- Project Scale: Both build alternatives would result in a bridge similar in length to the existing bridge, but slightly wider to accommodate two lanes of traffic and a shared use path that would create new views for recreationalists. The increased bridge height would be more visible to many viewers; however, in the visual context of the Columbia River Gorge, the scale of the surrounding mountains and expansive river would reduce the overall impact of the taller bridge. Because many viewers would see the bridge from higher elevations, the increased height of the bridge would have a negligible impact on their view. Recreational boaters, users of the TFASs, and other river traffic who would view the bridge from below would encounter a taller bridge with fewer in-water piers as compared with the existing bridge, opening larger viewing windows up and down the river and to surrounding landscapes.
- Project Form: Alternative EC-2 and Alternative EC-3 would have an alignment like that of the existing bridge. At the main span, the build alternative's vertical profile (height) would be higher than the existing bridge to meet navigational requirements but would have eight fewer in-water piers creating larger viewing windows between piers. Because there would be no substantial vertical elements above the bridge deck, views of the Project environment behind the bridge from the viewer's perspective would be unobstructed (Exhibit 3-51). The replacement bridge would have a curved arch appearance over the river, mimicking the adjacent natural ridgelines promoting visual harmony with the environment.
- Project Materials: Design character and ornamental elements would be consistent with the Columbia River Bridge Replacement guidelines in the CRGNSA Management Plan. Material and color selection would be finalized during the Project's design phase and are expected to be consistent with the existing visual character of the natural and cultural setting and applicable plans and permits. Sample architectural landscape concepts for the Project (Exhibit 3-52, Exhibit 3-53, and Exhibit 3-54) show how the bridge's design could be compatible with the scenic, cultural, natural, and recreational setting of the Columbia River Gorge. All design concepts would include railing, lighting, and benches. Other concepts may be developed through the aesthetics advisory committee as the Project advances through final design and permitting phases; however, for the EIS the following architectural landscape concepts are defined as:

- Historic: The historic concept reflects elements from the existing Hood River Bridge including green steel railings adjacent to travel lanes and the shared use path, decorative vehicle lighting, recessed walkway lighting in the shared use path, and backless benches.
- Columbia River Gorge: The Columbia River Gorge design concept embodies similar design to other bridges and roadways along I-84, SR 14, and other National Scenic Area facilities including cobra head style vehicle lighting, recessed walkway lighting within the wall separating the shared use path from the vehicle lanes, and benches.
- Contemporary: The contemporary concept includes steel railings, curved vehicle lighting, ground-level lighting on the shared use path, and two-level benches.

- Project Visual Character: Overall, the replacement bridge would be compatible with the existing natural, cultural, and Project environment in terms of scale, form, and materials and would not substantially alter views of the landscape.

Exhibit 3-51. Looking East from Columbia River/Marine Beach Sandbar (Key Viewpoint #13) Photo Simulation

Existing view

Proposed view

Exhibit 3-52. Historic Architectural Landscape Concept

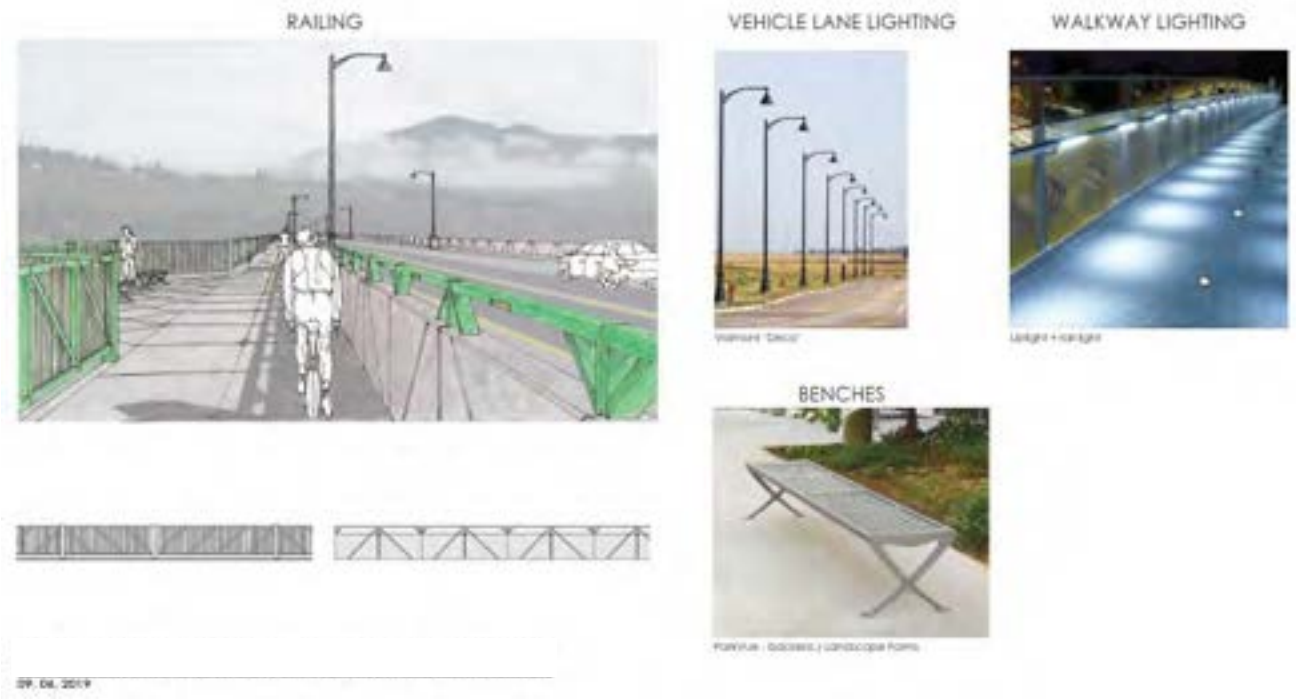
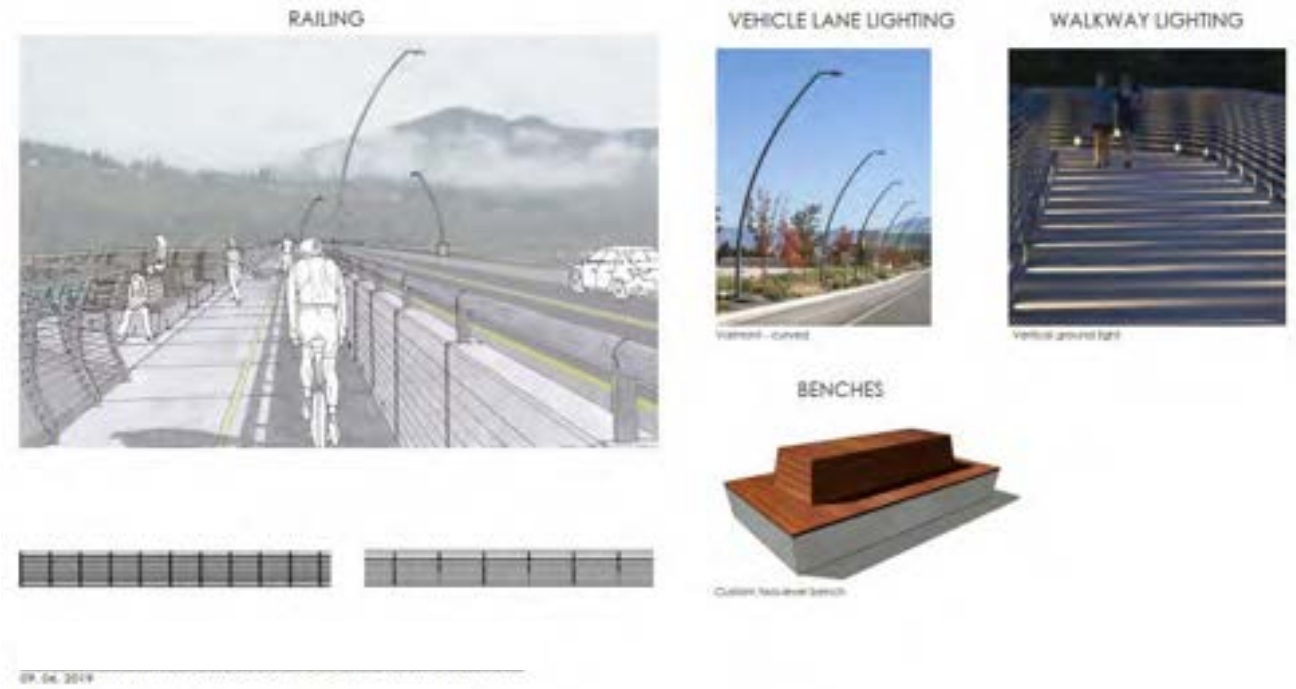


Exhibit 3-53. Columbia River Gorge Architectural Landscape Concept

Exhibit 3-54. Contemporary Architectural Landscape Concept



Viewer sensitivity to the Project over the long-term would be expected to be low for the build alternatives. The Project would replace an existing bridge with one of similar scale and approximate alignment (Exhibit 3-55). The public has voiced support for the Project as incorporated into planning documents for CRGNSA, Klickitat County, and Hood River County, and the build alternatives would create new views and recreational opportunities for bicyclists and pedestrians. Viewer groups at the White Salmon TFAS include commercial, subsistence, or ceremonial fishers and temporary residents. White Salmon TFAS viewers may be sensitive to changes in the visual environment resulting from the construction of a new bridge. The green color of the steel bridge components and the proposed natural or earth-toned colors and open structural design would help the bridge blend visually with surrounding Gorge-landscape, as visually unobtrusive as practicable and harmonious with the structures and land uses in the urban areas.

Exhibit 3-55. Looking Southeast from Waubish Road (Key Viewpoint #5) Photo Simulation

Existing view

Proposed view

Using the framework of key viewpoints and the three dimensions of visual quality (natural harmony, cultural order, and coherence of Project components). The build alternatives would generally have the same visual quality impacts since the design of the replacement bridge would be of similar scale with only the alignment and number of in-water piers being the primary difference across alternatives. The overall impacts to visual quality would be neutral for the Project, which would utilize approximately the same corridor to replace an existing two-lane bridge with a new, two-lane bridge with a bicycle and pedestrian shared use path. Specific improvements to visual quality resulting from the build alternatives include aesthetic and architectural treatments on the bridge including ornamental railing for pedestrians, a shallower bridge deck and fewer piers with less obstructed views above and below the bridge, and new viewpoints for pedestrians and bicyclists on the bridge.

Expected visual quality impacts and benefits from the Project common to the 14 key viewpoints would include:

- Natural harmony: The primary change to the natural environment from the build alternatives would be vegetation removal for the north touchdown visible from a handful of key viewpoints including the removal of a mature Oregon white oak in Alternative EC-3. Mitigation plantings would result in a neutral to beneficial impact within a few years. For viewers already accustomed to a bridge, the build alternatives would have fewer in-water piers and no substantial vertical elements above the deck creating broader viewing windows and offering better views of the river, forested slopes, and distant mountains (Exhibit 3-56). Placement of existing utilities underground that are now aboveground would enhance views of the natural environment from the Washington side of the river.

Exhibit 3-56. Looking Northwest from Hood River Waterfront Trail (Key Viewpoint #3) Photo Simulation

Existing view

Proposed view

- Cultural Order: The existing bridge has been a visual component of the AVE for generations, but its replacement has been supported by the community for many years. Other cultural landmarks including buildings and infrastructure in the AVE seen from the key views would not be adversely affected since the slimmer bridge design with fewer vertical elements and larger viewing windows would maintain or improve views. Later phases of the Project would convene an aesthetics advisory committee to develop a shore-to-shore design concept reflecting the community's cultural order preferences. The bridge's slimmer design with larger viewing windows and integration of cultural preferences in design would result in an overall neutral visual quality change. The bridge is not expected to alter the existing pattern of work, society, or community at the White Salmon TFAS. Horizontal bridge elements would be somewhat higher with a slimmer profile than the existing bridge and there would be fewer vertical piers, which would allow for more open views of the surrounding landscape from the White Salmon TFAS, which are an important component of the cultural order at this site. Views of Mount Hood, valued by White Salmon TFAS users, would be preserved under the build alternatives (Exhibit 3-57).
- Project Coherence: The shore-to-shore design concept would promote visual consistency. The Project's scale and form would be compatible with the visual character of the AVE and the Columbia River Bridge Replacement guidelines including the concrete piers that would be consistent with other bridges and roads in the Hood River and White Salmon/Bingen urban areas. Final aesthetic design including color, railing design, and light fixture design, site and pedestrian furnishings would be directed by the aesthetics committee. Project coherence would be high resulting in a neutral change to visual quality.

A potential indirect impact from the build alternatives would be increased pedestrian and bicycle use of the replacement bridge over time, which would allow more recreationalists and those who commute by these modes to have views from the bridge toward the Columbia River Gorge.

Exhibit 3-57. Looking South from the White Salmon TFAS (Key Viewpoint #15) Photo Simulation

Existing view

Proposed view

Summary

Exhibit 3-58 summarizes the construction-related, direct, and indirect impacts and benefits related to visual resources.

Exhibit 3-58. Summary of Impacts to Visual Resources

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Construction Impacts	• None	• Construction signs, brightly colored and reflective safety equipment, fencing and barricades • Terrain grading at north and south touchdown areas • Construction vehicles and heavy equipment • Boats, barges, and cranes for in/over water activities • Flashing lights and illumination of work areas	
Visual Compatibility	• No change	• Project scale, form, materials, and character would be compatible with visual character of AVE	
Viewer Sensitivity	• No change	• Change in viewer sensitivity looking toward the bridge would be low because an existing two-lane bridge would be replaced by a new two-lane bridge of similar scale	
Visual Quality	• No change	• Overall: Visual quality impacts would be neutral • Natural harmony: New views would be created from the replacement bridge for pedestrians and bicyclists; Alternative EC-2 and Alternative EC-3 would remove vegetation and fill at north approach including a mature tree in Alternative EC-3 • Cultural order: Community supports a replacement bridge and a slimmer bridge design would maintain and improve views of cultural landmarks • Project coherence: Shore-to-shore design concept would promote visual consistency; Project form and scale, including concrete piers, would be consistent with bridges and roads in the area and the Columbia River Bridge Replacement guidelines	
Indirect Impacts	• Removal of vehicle light and reflective glare once existing bridge is inoperable.	• Increased pedestrian and bicycle use of replacement bridge, allowing growth in recreational sight-seeing opportunities • Increased vehicular traffic	

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to visual resources:

- Minimize Project-related light and glare to the maximum extent feasible, given safety considerations, by operating lights at the lowest wattage practicable.
- Focus lights on the work area only and direct lights away from night skies and nearby sensitive locations such as residences, the White Salmon TFAS, medical facilities, and parks.
- Use shields on lights to prevent ambient spill-over light, when practicable.

- Restore staging areas to preconstruction conditions once construction is complete to minimize the impact on visual quality and character at these sites. Restoration of the staging areas would meet the following performance standards:
  - All disturbed terrain would be restored.
  - Replacement plantings would be installed in areas where vegetation was removed. All replacement plantings would be native and indigenous to the area. No invasive plant species would be used under any conditions.
- Minimize the removal of trees and shrubs and pruning needed to accommodate construction activities. For vegetation removed in Washington, follow WSDOT's Roadside Manual guidance for vegetation replanting (WSDOT 2017).
- Contour grading so that it looks consistent with natural terrain to the degree possible.

Long-Term Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate long-term impacts to visual resources:

- Convene a broadly representative aesthetics committee to support the subsequent phase of land-use permitting. The aesthetics committee would recommend a cohesive aesthetic theme for the non-structural components of the bridge, including but not limited to such things as railings, light poles, site furniture, and signage. The committee could also make a recommendation on concrete colors, textures, shapes, and treatments that would be consistent with the visual quality goals for Columbia River Bridge Replacement described in the CRGNSA Management Plan.
- Use low-sheen and non-reflective surface materials to reduce potential for glare.
- Use lighting that has minimum impact to the surrounding environment.
  - Downcast, cut-off type fixtures would be used to shield and direct light only towards objects requiring illumination.
  - Install lights at the lowest appropriate height and cast low-angle illumination while minimizing incidental light spill onto adjacent properties, open spaces, or backscatter into the nighttime sky.
  - Light fixtures would have non-glare finishes that would not cause reflective daytime glare.

Additional detail on visual resources is provided in the Visual Impact Assessment Report (Appendix P).

3.20. Noise and Vibration

Existing Conditions

Ambient noise monitoring near the existing bridge on the Oregon side of the Columbia River.

Noise levels are influenced by loudness of the source, number of sources, distance from the source, and whether existing topography or structures dampen the noise. Traffic from the bridge, SR 14 and I-84 are the dominant noise sources in the API with noise from aircraft and trains also present. Existing noise levels at 25 modeled sites range from 47 decibels to 65 decibels along current roadways. The White Salmon TFAS is located immediately west of the existing bridge. Receptor site R15 is an existing picnic area within the TFAS and receptor site R16 is the camping and residential area within the TFAS; the project-specific noise study modeled existing noise levels at 52 decibels at these receptor sites. The highest noise levels are at the Heritage Plaza Park and Ride facility on the Washington side of the Columbia River and at Hood River WaterPlay on the Oregon side. WSDOT and ODOT establish Noise Abatement Criteria (NAC) for different land use categories including recreational, commercial, and residential. The Project-specific noise model shows that, except for the Hood River WaterPlay modeled at 65 decibels, noise levels at all land uses within the API range from 51 decibels to 64 decibels, which is below ODOT and WSDOT NAC.

Project Impacts and Benefits

No Action Alternative

Construction noise would not result from the No Action Alternative, since it does not include construction activities. Direct impacts include an increase in noise of 0 decibels to 3 decibels at receptor sites as a result of increased traffic. Following closure of the existing bridge in 2045 when it reaches its operational lifespan, traffic noise on the bridge would cease.

Build Alternatives

Both build alternatives would generate temporary noise during the 6-year construction period from activities such as clearing, grading, removing old roadways, paving, and construction of the bridge, and roadway connections. The highest noise levels would come from the impact and vibratory pile installation and removal, removal of the existing bridge, and earthwork phase. Noise generated by the engines of construction equipment would be the most prevalent type. Construction noise levels would range from 69 decibels to 106 decibels at 50 feet away. Noise impacts would be reduced or eliminated by working only during specified hours and using equipment meeting U.S. EPA standards with mufflers. The build alternatives are close to noise sensitive land uses including the White Salmon TFAS that would be located approximately 500 feet west of bridge construction. Other noise sensitive land uses in proximity to the bridge include Bridge RV Park and Campground on the Washington side of the River and the Hood River Waterfront Trail, Hood River WaterPlay, and Best Western Hood River Inn on the Oregon side. These land uses would experience construction noise.

Roadway traffic noise levels under the build alternatives would not change much over time despite projected increases in future traffic volumes. Changes in future noise levels over existing conditions would range from an increase of 3 decibels to a decrease of 1 decibel depending on the existing land use and its location (Exhibit 3-59). Decreases in noise at certain land uses in the build alternatives would be due to the distance from the alternative alignment and a quieter driving surface as compared with the existing steel grate deck. Increases would primarily be due to an increase in future traffic levels and speeds expected under each alternative and are not considered substantial under any of the bridge build alternatives in year 2045. The TFAS would also experience a slight increase in noise ranging from 1 decibel to 3 decibels over the long-term, an increase that would be barely be perceptible to most listeners including the commercial, subsistence, or ceremonial fishers and residents and campers at the site.

No indirect noise impacts are expected from the No Action Alternative or either of the build alternatives.

Exhibit 3-60 summarizes noise impacts by alternative.

Exhibit 3-59. Modeled Locations and Predicted Build Impacts (2045) for the Build Alternatives

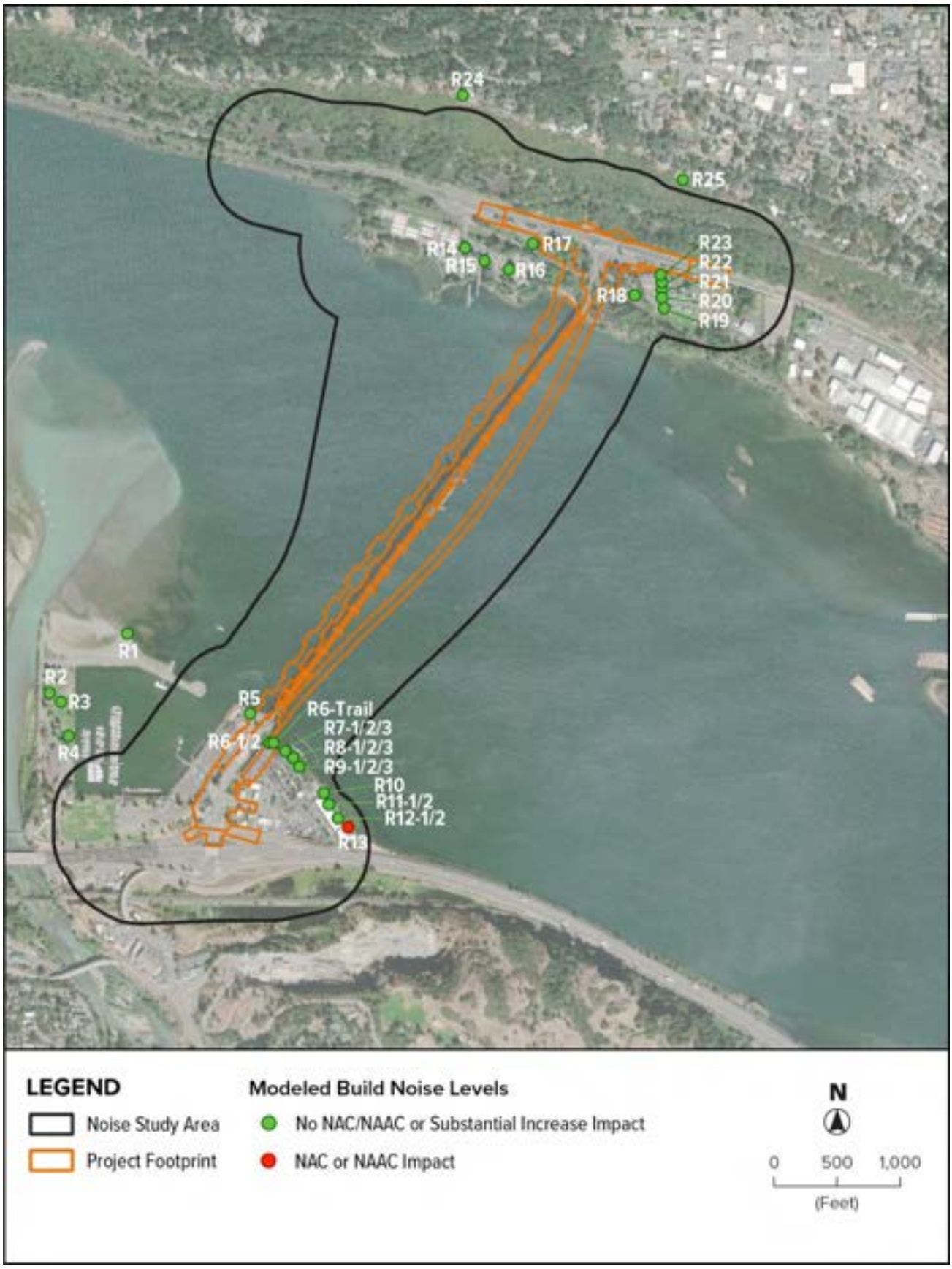


Exhibit 3-60. Summary of Impacts to Noise Levels

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Construction Impacts	• None	• Temporary increase in noise at areas near construction	
Locations Exceeding NAC	• Hood River WaterPlay: modeled for 65 decibels in 2045 (due to I-84 traffic)		
Indirect Impacts	• None		

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to noise levels:

- The contractor would comply with all state and local sound control and noise level rules, regulations, and ordinances that would apply to any work performed pursuant to the contract.
- All equipment would comply with pertinent equipment noise standards of the U.S. EPA.
- All equipment used would have sound control devices no less effective than those provided on the original equipment. No equipment would have unmuffled exhaust.
- No construction would be performed within 1,000 feet of an occupied dwelling unit on Sundays, legal holidays, or between the hours of 10:00 pm and 6:00 am on other days without the approval of the Port construction Project Manager.
- No vibratory or impact hammers, hoe ramming, or blasting operations would be performed within 3,000 feet of any occupied dwelling unit, including camping areas at the White Salmon TFAS or Bridge RV Park, on Sundays, legal holidays, and between the hours of 8:00 p.m. and 8:00 a.m., Monday through Saturday without the approval of the Project Manager.
- The noise from rock crushing or screening operations within 3,000 feet of any occupied dwelling would be mitigated by strategic placement of material stockpiles between the operation and the affected dwelling or by other means approved by the Project Manager.

Should specific noise complaints occur during the construction of the Project, one or more of the following noise abatement measures would be required, as directed by the Project Manager:

- Locate stationary construction equipment as far from the nearby noise-sensitive properties as practical.
- Shut off idling equipment.
- Reschedule construction operations to avoid periods of noise annoyance identified in the complaint.
- Notify nearby residences, CRITFC, and Columbia River treaty tribes whenever extremely noisy work would be occurring.
- Install temporary or portable acoustic barriers around stationary construction noise sources.
- Consider operating electric-powered equipment using line voltage power or solar power instead of on-site generators.

Long-Term Impacts

One site, the pool at Hood River WaterPlay, represented by Site R13 would be impacted by traffic noise by both build alternatives. The impacted site is located approximately 1,000 feet from the existing bridge and approximately 130 feet from vehicles traveling on I-84 and would be located at or near the same distance from these roadways with the build alternatives. Possible mitigation measures for this receptor include:

- Traffic management: traffic control devices could be used to reduce the speed of the traffic; however, the minor benefit of 1 decibel per 5 mph reduction in speed does not outweigh the associated increase in congestion and air pollution. Other measures, such as time or use restrictions for certain vehicles, do not meet the transportation objectives of the facility.
- Alteration of horizontal and/or vertical alignments: any alteration of the build alternatives' alignment would displace residences, require additional right-of-way and not be cost effective/reasonable.

- Buffer zone: the acquisition of undeveloped property to act as a buffer zone is designed to avoid rather than abate traffic noise impacts and, therefore, is not feasible.
- Noise barriers: noise barriers include noise walls, berms, and buildings that are not sensitive to noise. A noise barrier's effectiveness is determined by its height and length and by project site topography. To be effective, the barrier must block the line-of-sight between the noise source and the receptor. It must be long enough (at least eight times as long as the distance from the home or receptor to the barrier) to prevent sounds from passing around the ends, have no openings (i.e., driveway connections), and be dense enough so that noise would not be transmitted through it. Intervening rows of buildings that are not noise sensitive could also be used as barriers (FHWA 1973).

Evaluation of Noise Barriers

As shown in Exhibit 3-61, one noise barrier, "Noise Barrier 1," was evaluated for the two build alternatives to reduce traffic noise levels at Hood River WaterPlay, which would be the one site exceeding ODOT Noise Abatement Approach Criteria . I-84 is the primary source of noise at Hood River Waterplay. Noise Barrier 1 was evaluated along the edge of the pavement north of the westbound I-84 off-ramp to Button Bridge Road. While the barrier would meet ODOT's noise reduction design goal of at least 7 decibels, the evaluation determined that the barrier would exceed ODOT's cost allowance and is, therefore, not recommended for placement. After considering I-84 as the primary source of noise, the mitigation options presented above, and the distance from I-84 to the API, no feasible and reasonable options are available to mitigate noise. No measures are required to avoid, minimize, or mitigate long-term noise impacts.

Exhibit 3-61. Location of Evaluated Noise Barrier

Additional detail on noise levels is provided in the Noise Technical Report (Appendix J).

3.21. Hazardous Materials

Existing Conditions

The API is in a geologic setting characterized by a stratigraphy of basalt and volcanic rock layers topped with alluvial and erosional soil deposits. Soils on the Washington side are silt loams and on the Oregon side are alluvial outwash from Hood River with fill placed over base soils. Groundwater in shallow wells is 22 feet to 42 feet below the surface on the Washington side and 5 feet to 15 feet on the Oregon side.

Records research revealed six sites of low-level risk for containing hazardous materials located within the API. These sites included the NW Pipeline meter station formerly holding mercury-containing equipment, and several sites contaminated with petroleum products including two gas stations, the Mt. Hood Railroad Company, the Mobil Oil Bulk Plant, and the Carson Oil Company site (Exhibit 3-62).

Known hazardous materials in the API:

- Mercury
- Petroleum
- Gasoline
- Diesel
- Heavy oils
- Solvents Herbicides/pesticides
- Asbestos
- Lead based paint
- Mineral insulating oil

Project Impacts and Benefits

No Action Alternative

There would be no construction or direct impacts to hazardous materials associated with the No Action Alternative from ongoing bridge operation because this alternative would not include construction activities. If a catastrophic event occurred such as an earthquake, landslide, or barge or vessel strike, the bridge could be damaged or collapse into the river. Direct impacts from a catastrophe could include release of hazardous materials such as lead-based paint chips from the bridge, asbestos and hydraulic fluids entering the water from bridge infrastructure, as well as the potential that all or part of the bridge superstructure could fall into the Columbia River. Indirect impacts from the No Action Alternative include an ongoing risk that hazardous materials transported across the existing bridge could spill and enter the Columbia River through the steel grate bridge deck or spills along detour routes may occur during bridge closure.

Build Alternatives

In both build alternatives, construction activities over water and near the former city docks and BNSF Railway line could encounter hazardous materials, soil, and groundwater that would need to be properly removed. Additionally, if the pole mounted transformers along SR 14 containing mineral insulating oil are not handled correctly, PCBs could be released into the ground or water. During removal of the existing bridge, lead paint and asbestos present in the existing bridge and associated facilities would need to be managed. There would be a low risk that construction activities for the roundabout in Alternative EC-2 could encounter mercury-contaminated soils that remain after cleanup activities in 1991 and 2007 at the Northwest Pipeline meter station. In addition to encountering hazardous materials, there would be the potential for accidental spills of hazardous materials during construction. Relatively small quantities of fuels (including diesel, gasoline, and propane) for various pieces of small equipment would likely be stored at a construction staging area. Concrete would also be poured to connect bridge segments. There would be the potential for accidental spills of these materials with a risk of polluting the waterway or ground.

Direct impacts from the build alternatives would be limited to the potential for release of hazardous materials during bridge maintenance or from bridge accidents that could contaminate stormwater facilities.

There would be no indirect impacts to contaminated or hazardous material sites from any of the bridge replacement alternatives.

Exhibit 3-63 summarizes the impacts from and benefits of removal of hazardous materials by alternative.

Exhibit 3-62. Sites of Environmental Concern to the Project

Exhibit 3-63. Summary of Impacts to Hazardous Materials and Benefits of Removal

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Potential Hazardous Materials Risks During Construction	• None	• Sediments along submerged lands of the Columbia River • Spill-contaminated materials within BNSF Railway right-of-way • Asbestos and/or lead from existing bridge and tollbooth removal • Removal of hazardous materials encountered during construction • Potential for hazardous material spills to water or ground	
		• Mercury at the Northwest Pipeline meter station	• No additional known hazardous materials encountered
Direct Impacts	• Spills would continue to discharge directly to the Columbia River	• Spills would no longer discharge directly to the Columbia River • Spills could migrate off the bridge into stormwater water quality facilities	
Indirect Impacts	• Spills could occur on alternative routes after closure of the existing bridge	• None	

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to hazardous materials:

- Characterize soil, sediment, and groundwater conditions within and adjacent to the alignment prior to construction and remediate if necessary. This includes the characterization of soil, sediment, and groundwater at pier locations within the Columbia River because of historic industrial uses along the Columbia River.
- Arrange with utilities to remove and relocate transformers as necessary along the alignment.
- Arrange with Northwest Pipeline LLC to relocate the natural gas metering station (Alternative EC-2 only).
- Conduct pre-removal surveys for asbestos, PCBs, and lead for the existing bridge and all other structures to be removed. If necessary, proceed with removal and disposal in accordance with regulations prior to removal of the existing bridge. Prepare pollution prevention plans and hazardous materials containment plans in accordance with WSDOT Standard Specification Section 1-07.15(1) "Spill Prevention, Control and Countermeasures Plan," and ODOT Standard Specification Section 00290.29(g) "Spills and Releases" and Section 00290.30 "Pollution Control."
- Wash-water from concrete delivery trucks, pumping equipment, and tools will also be similarly (impervious basins) contained. Treated equipment entering state waters (including barges, boats, cranes, etc.) would be maintained to prevent any visible sheen from petroleum products from appearing on the water's surface. No oil, fuel, or chemicals would be discharged into the Columbia River. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc. would be checked regularly for drips or leaks; they would be maintained to prevent spills. Concentrated waste or spilled chemicals would be removed from the site and disposed of at a facility approved by Ecology, Oregon DEQ, or the appropriate county health department.
- Spills into the Columbia River, or onto land, with a potential to enter the water would be reported immediately to relevant agencies including U.S. EPA, USCG, Oregon DEQ, and Ecology. Emergency spill control equipment would be on-site at all times. If a spill occurs, containment and clean-up efforts would begin immediately and be completed as soon as possible, taking precedence over normal work. Paint and solvent spills should be considered as oil spills and thus prevented from entering the Columbia River.
- Conduct site assessments as necessary to evaluate soil, sediment, and groundwater conditions near the hazardous materials. Evaluate soil conditions near construction as grading and drilling activities occur. Remove and dispose of hazardous materials, and remediate contaminated soil, sediment, and groundwater in accordance with applicable regulations.

- Evaluate soil conditions along the railroad grade as construction grading occurs. If contaminated soil is suspected, assess soil conditions and remediate as necessary in accordance with applicable regulations.
- If soil and groundwater contamination that has not previously been assessed is encountered during drilling, clearing, and grading activities in the Project footprint, these impacts would be mitigated by assessment and remediation following WSDOT Standard Specification Section 1-07.5(3) "State Department of Ecology" and ODOT Standard Specification Section 00290.29(f) "Unexpected Contamination."

Long-Term Impacts

No measures are required to avoid, minimize, or mitigate long-term impacts to hazardous materials.

Additional detail on hazardous materials impacts is provided in the Hazardous Materials Technical Report (Appendix G).

3.22. Irreversible and Irretrievable Commitment of Resources

Implementation of the proposed action would involve a commitment of natural, physical, human and fiscal resources. Land used in the construction of the proposed facility is considered an irreversible commitment during the time that the land is used for the transportation facility. However, if a greater need arises for use of the land, or if the transportation facility is no longer needed, then the land can be converted to another use. At present, there is no reason to believe that it would ever be necessary or desirable to convert land used for this transportation Project to another use.

Construction of a replacement bridge would require one-time use of labor and construction materials.

Considerable amounts of fossil fuels, labor, and roadway construction materials such as cement, aggregate, and bituminous material would be expended during construction of the Project. Additionally, large amounts of labor and natural resources would be used in the making of construction materials. These materials are generally not retrievable. However, they are not currently in short supply and their use would not have an adverse impact upon continued availability of these resources. Any construction of the replacement bridge and deconstruction of the existing Hood River Bridge would also require a substantial one-time expenditure of local, state and/or federal funds, which would not be retrievable. The commitment of these resources is based on the concept that residents, businesses, and economies in the local area, region, and states would benefit from the improved quality of the transportation system. These benefits would consist of improved safety, multimodal accessibility, travel time, and navigation, which would be expected to outweigh the commitment of these resources. In addition to the costs of construction and right-of-way acquisition, there would be costs for bridge and roadway maintenance.

Both build alternatives would commit the same types and amounts of irreversible and irretrievable resources.

3.23. Relationship between Local Short-Term Uses of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity

No Action Alternative

The No Action Alternative offers none of the gains or losses described above. However, the No Action Alternative would not meet the Project's purpose and need (Section 1.2, Purpose and Need). The No Action Alternative would avoid short-term impacts but would have long-term adverse impacts from seismic instability, reduced travel reliability, increased maintenance needs, navigational hazards for marine freight vessels, and eventual closure of the existing bridge. Bridge closure would have associated safety impacts; degraded emergency service response times, diminished transit, vehicle, and freight travel times and reliability; reduced cross-river connectivity; and a diminished regional economy.

Construction of the build alternatives would reduce ongoing maintenance needs of the existing bridge.

Build Alternatives

The build alternatives would have similar temporary, short-term impacts during construction. Short-term impacts and use of resources resulting from any build alternative could include the following:

- Noise, dust, light, and glare produced by construction equipment and activities
- Traffic delays and detours for automobiles, freight trucks, buses, emergency response vehicles, bicyclists, and pedestrians
- Slight changes to commercial and tribal fishers' navigation during construction to avoid temporary, barge-based equipment in the river
- Use of materials, labor, and energy to construct improvements
- Changes in access to properties during construction
- Reduced visibility, dust creation, soil erosion, respiratory hazards, mobilized contaminants, changes in aesthetics of the surrounding area, establishment of invasive plants, increased sediment in stormwater runoff because of ground clearing construction activities
- Creation of short-term jobs to construct the Project and related spending at local businesses

Project implementation would result in the short-term impacts and use of resources as described above, while providing long-term gains including reduced congestion and improved safety, travel reliability, cross-river connectivity, emergency service response times, transit travel times, truck freight movement efficiency, economic benefits, seismic resiliency, and improved horizontal clearance for marine freight vessels to maneuver under the bridge.

4. CUMULATIVE IMPACTS

Chapter 4 assesses the potential for the Project, in combination with other current and reasonably foreseeable future actions (RFFAs) to contribute to cumulative impacts on each of the resources analyzed in Chapter 3.

4.1. ANALYSIS OF CUMULATIVE IMPACTS

Under NEPA, cumulative impacts result from the incremental effects of a project when added to other past, present, and RFFAs. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time, regardless of who undertakes them. The analysis of cumulative impacts helps decision-makers and the public know whether there are incremental changes to a given resource which could, if left unmitigated, reach significant proportions.

HISTORIC CONTEXT AND PAST ACTIONS

Human occupation in the Northwest is believed to have begun following the retreat of glacial ice across the landscape in the Late Pleistocene period. Archaeological sites identified in this region indicate that early precontact culture (before European settlement) was highly mobile and relied heavily upon large game. Between 12,000 years to 7,000 years ago, socio-economies appear to have changed to a foraging strategy that included smaller inland game, aquatic animals, and a variety of plants. Sites from this period are typically encountered on high marine and river terraces. After 5,000 BP, populations appear to become larger and more complex as groups utilized a wider range of resources, including salmon and shellfish, land mammals, and plant resources such as berries, roots, and bulbs (Aqua Terra 2019).

The API is in an area that was traditionally utilized by several Indian groups and bands. At White Salmon, the Chilluckittequaws were known as the Woocksockwilliacums, who were comprised of several bands whom roughly extended from 10 miles below The Dalles west to the White Salmon River. The Chilluckittequaws at Hood River were called Smock-shops by Lewis and Clark and generally lived on the Columbia River. The Columbia River, White Salmon River, and Hood River and their tributaries were fished; and, a variety of plants, vegetables, berries, and nuts were gathered from the shoreline and adjacent uplands by tribes who generally practiced a seasonal round of resource procurement. Generally, family groups would winter in large villages along major waterways and would move to higher elevations during the summer (Aqua Terra 2019).

Several ethnographic villages and place names were recorded within, and in the vicinity of, the API by early ethnographers. Lewis and Clark recorded a number of encampments along the Columbia River with villages at the confluence of the John Day River (near Maryhill Museum), on Miller Island (at the confluence of the Deschutes River), at Celilo Falls, Ten and Five Mile Rapids, and multiple spots along the Bonneville Pool including Fort Rock and the Bad Place. During their travels in October 1805, Lewis and Clark reported observing 14 Indian houses “scattered” on the north bank of the Columbia River above the mouth of the White Salmon River, and in April 1806, on their way back upriver, Lewis and Clark reported a large village consisting of approximately 20 houses spread over several miles (Aqua Terra 2019).

White settlement in the region began with the migration west on the Oregon Trail during the early-1800s, which led to the eventual incorporation of the City of White Salmon in 1907 and the City of Hood River in 1895. White settlement lead to the eventual removal of several Indian groups and bands in the region onto designated reservations. Multiple treaties were signed in 1855 between the U.S. government and four federally-recognized tribes with ties to the Columbia River that ceded millions of acres of their lands in the region to the U.S (CRITFC 2020a).

By the 1840s, fur trading, the main industry in the Klickitat area, was in decline and the economic engine that drove the region’s development turned to permanent land settlement and land claims. Industry in the area changed as fur trading was replaced mainly by timber and wheat ranching, as well as fruit orchards, and salmon fishing (Mt. Adams Chamber of Commerce 2019). In the early 1900s, rail service was added along the north and south banks of the Columbia River, allowing farmers and loggers to transport their goods to domestic and international markets. The Hood River Bridge was constructed in 1924 to connect the cities of White Salmon and Hood River, and the vertical lift span was added in 1938 following construction of the Bonneville Dam. The Port purchased the bridge in 1950 and since that time has completed numerous repairs and upgrades to the structure. Supported by rising ownership in the personal automobile in the 1950s and 1960s, SR 14 in Washington and I-84 in Oregon were constructed to provide east-west connections through the Columbia River Gorge.

Since the 1980s, downturns in the logging industry have impacted the economy in Klickitat County, requiring the county to focus on other industries, including sheep and cattle raising, wheat, orchards, viticulture, recreational tourism, and industrial development (Becker 2016). The traditional economy in Skamania County, established in 1854, was salmon harvesting. With the development of industrial canning technology in the 1870s, fishers were able to take vast quantities of salmon to export domestically and internationally. As transportation down the river improved with the canals and locks, logging and milling became profitable and surpassed salmon harvesting as the dominate economic activity in the county. The fishing industry ultimately suffered from over-fishing and from the construction of the Bonneville Dam in the 1930s (Wilma 2006). In addition, dam building along the Columbia River lead to the inundation of numerous traditional tribal fishing grounds behind the dams; taking away the rights of tribes to fish at their usual and accustomed places that were reserved to them by the aforementioned treaties signed in 1855 (CRITFC 2019). Logging and forest products in Washington state have experienced a long, slow decline beginning in the 1930s. In the last years of the twentieth century, the economy shifted away from logging, and tourism became the dominant industry in Skamania County. In Hood River County, beginning in the late 1800s, apple orchards were successfully established and became a significant contributor to the local and regional economy. After a killing freeze struck the orchards in 1919, many farmers converted their apple orchards to pear orchards, and the area is now one of the world's highest producers of Anjou pears (Hood River County Chamber of Commerce 2019).

Since the 1940s and 1950s, the Port of Klickitat and Port of Hood River have made substantial investments in waterfront development. The Port of Hood River undertook three substantial fill projects along the waterfront to support development of the Hood River Marina and Port Marina Park, to create additional land for light industrial and commercial businesses, and to support the growing recreational and tourism industries in the area. Beginning in the 1990s, the Port of Hood River began focusing on light industrial and recreational development along the Columbia River waterfront. Waterfront parcels continue to be improved and marketed to private developers for light industrial, commercial, and recreational uses (Port of Hood River 2014). These investments continue today at the Bingen Point Business Park, Hood River Marina and Port Marina Park, and the Port Wasco Business Park.

Development within the Columbia River Gorge has also been shaped by the creation of the CRGNSA. In an effort to achieve balanced growth and protect the unique natural and cultural history of the Columbia River Gorge, the CRGNSA was designated by the U.S. Congress and the CRGNSA Act signed into law in 1986. The CRGNSA Act mandates the protection and enhancement of scenic, cultural, natural, and recreational resources within the Columbia River Gorge, spanning 85 miles and 292,500 acres on both sides of the Columbia River.

Exhibit 4-1 further illustrates some of the past actions that have shaped the historic context of the API.

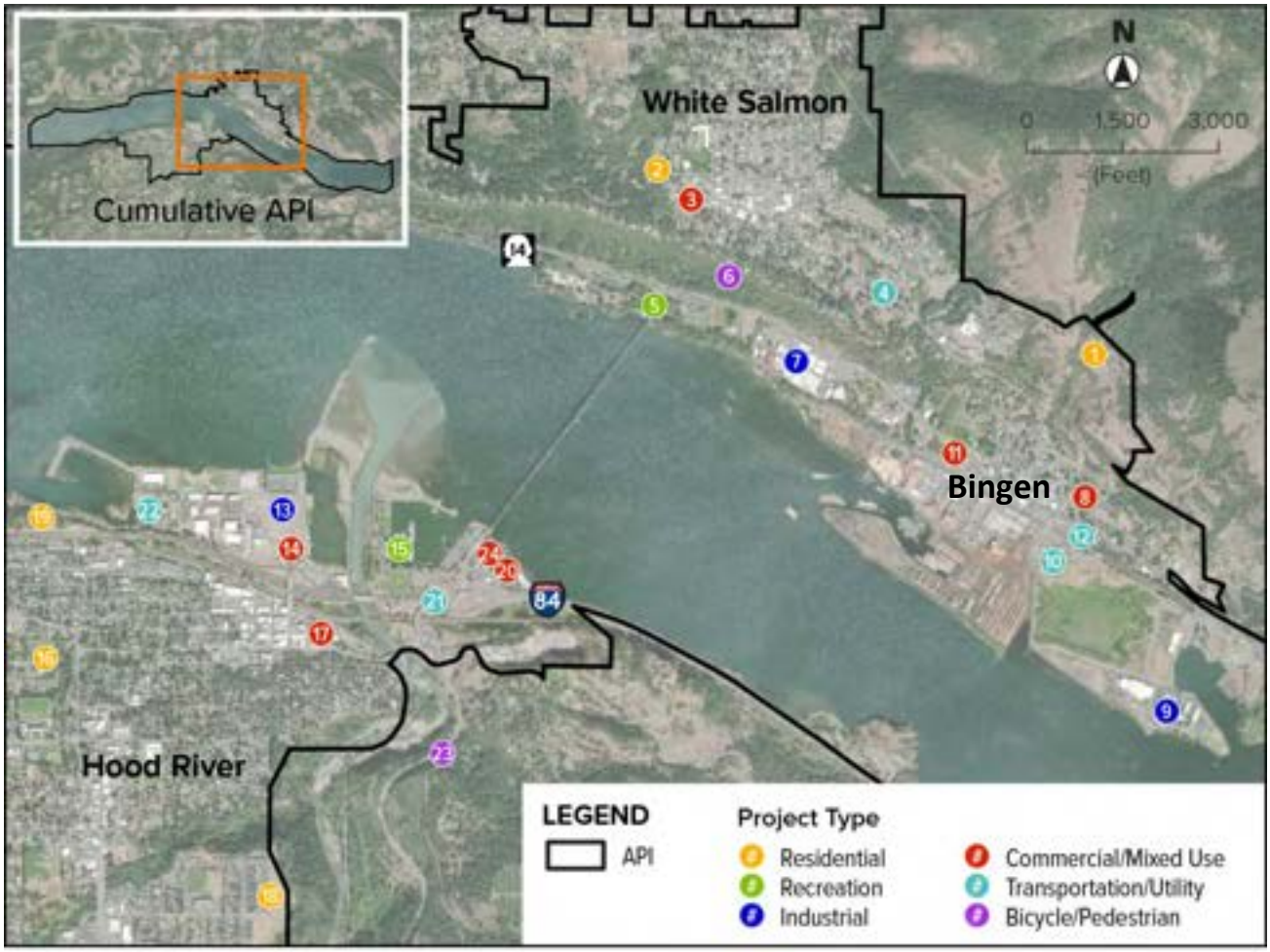
Other Current and Reasonably Foreseeable Future Actions

Current actions in the API include the ongoing maintenance of utilities, local and regional transportation systems, and the Columbia River navigation channel.

Exhibit 4-2 identifies projects that comprise other current and RFFAs within the API that could affect environmental and community resources. These actions include public and private development/redevelopment (commercial, residential, recreational, and industrial) and infrastructure projects.

Exhibit 4-1. Timeline of Past Actions in the API

Exhibit 4-2. Current and Reasonably Foreseeable Future Actions



City of White Salmon

1. Dry Creek Planned Unit Development *(69 lots)*
2. SixS Planned Unit Development *(40 lots)*
3. Three Mixed-Use Buildings
4. Highway 141 Paving and Water Line Improvements *(from NW Garfield Avenue in White Salmon to SR 14 in Bingen)*
5. Bridge Park
6. Bicycle and Pedestrian Corridor *(connecting central White Salmon with the Columbia River, via Highway 141 and N. Dock Grade Road)*

City of Bingen/Klickitat County

7. Underwood Fruit Company Building Replacement
8. The Society Hotel
9. Bingen Point Business Park Build Out
10. Bingen Wastewater Treatment Plant Improvements
11. Potential Hotel and Subdivision Development
12. Bingen Point Access *(roundabout and BNSF undercrossing near SR 14 and Elm Street)*

City of Hood River/Port of Hood River/Hood River County

13. Light Industrial Subdivision *(7 lots)*
14. Commercial Site Development
15. Port of Hood River Marina Capital Improvements and Marina Master Plan Update
16. Multi-Family Residential Development *(30 dwelling units)*
17. Mixed-Use Development *(commercial development and 40 dwelling units)*
18. Sieverkropp Subdivision *(50 lots)*
19. Morrison Park Subdivision *(65 lots)*
20. Best Western Hood River Inn – Gorge Room Expansion
21. I-84 Exits 63 and 64 Interchange Improvements
22. Hood River Wastewater Treatment Plant Upgrades
23. Future Pedestrian and Bicycle Trail *(from Hood River to Parkdale, along the Hood River)*
24. New Hotel *(80 units – Marketplace building will be demolished and the site will be redeveloped)*

4.2. Results of Cumulative Impacts Analysis

Air Quality and Greenhouse Gases

The air quality conditions in the API reflect the developed nature of the API, including residential, commercial, and industrial development and associated vehicular traffic. However, the API is located in an attainment area for all criteria pollutants as identified in the Clean Air Act. GHG emissions generally occur from human activities revolving around transportation, electricity generation, industry, and commercial and residential uses. As the API has been developed over time, GHG emissions generated in the API have increased.

Planned growth and development in the API is expected to cumulatively increase traffic and associated vehicular emissions, as well as cumulative increases in emissions from businesses, homes, and industrial sites. While the replacement bridge would marginally increase traffic capacity by providing wider, safer traffic lanes, none of the build alternatives are expected to induce growth or substantially change transportation demand or traffic patterns in the region. Because traffic patterns would remain similar, the build alternatives would not result in long-term impacts on air quality during operation of the replacement bridge. In addition, U.S. EPA regulations for vehicle engines and fuels are expected to cause MSAT emissions to decline substantially over the next several decades. The Project would not be anticipated to result in negative impacts on air quality under either of the build alternatives; therefore, it would not contribute to cumulative impacts on air quality and no mitigation for cumulative impacts is warranted.

The Project would contribute to minor cumulative impacts to GHG emissions as a result of bridge material production, construction, and yearly routine maintenance. GHG emissions that are not offset would have minor contributions to long-term atmospheric impacts that contribute to climate change. Impacts would be partially offset by Project-specific design features. Each of the build alternatives would provide a shared use path, introducing a non-motorized travel option across the Columbia River and thereby potentially reducing GHG emissions from vehicular trips. the Project would be expected to improve traffic flow on the bridge and at the roundabout at the SR 14 intersection; and construction of the Project would prevent the eventual closure of the existing bridge at the end of its operational life, thus preventing an increase in out of direction travel to cross the Columbia River if there would no longer be a direct, cross-river transportation connection at this location. However, the increase in out of direction travel associated with the closure of the bridge under the No Action Alternative would be offset with projected increases in emissions standards and vehicle fleet mix. As Project GHG emissions from construction of the build alternatives would be minor and be partially offset by design features, no mitigation for cumulative impacts to GHG emissions is warranted.

Energy

Increased growth and development have led to the current energy consumption within the API. Transportation accounts for a major portion of the energy consumed in Washington and Oregon. Petroleum (e.g., gasoline, diesel fuel, jet fuel) was the predominant source of transportation energy consumption in Washington and Oregon in 2016, at approximately 98 percent in both states (EIA 2019).

The construction and operation of current projects and RFFAs would increase energy consumption within the API from increased vehicle-miles traveled, vehicle delays, electricity generation, and operation of industrial, commercial, and residential uses, as well as outside of the API from the manufacturing of construction materials and the transport of materials to construction sites. Increases in energy consumption from vehicle-miles traveled are anticipated to be minor as U.S. EPA's national control programs are projected to improve fuel economy and produce cleaner fuels, resulting in lower overall energy consumption from vehicles. The Project and all current projects and RFFAs would be subject to federal, state, and local energy conservation measures.

The direct energy consumption analysis in the Energy Technical Report (Appendix D) reflects future land use, employment, and growth and, therefore, includes cumulative impacts to energy consumption. Operational energy consumption from the replacement bridge (63 mmBtu) would be similar to the existing bridge (50 mmBtu), in addition to the one-time energy requirements of the construction process (959,841 mmBtu); therefore, the Project would have a minimal contribution to cumulative impacts on energy resources. As this contribution is expected to be minor, no mitigation for cumulative impacts is warranted.

Fish and Wildlife

Fish and wildlife conditions in the API reflect the developed nature of the Columbia River and surrounding upland areas. Habitat loss through dam construction, forest practices, and urbanization over the past century have contributed to the degradation of habitat that supports fish and wildlife species in the API. The construction of 11 hydroelectric dams on the Columbia River and 4 dams on the Snake River limit anadromous fish migration and impact resident fish habitat in the API. These dams create impoundments that reduce flow rates, allow settling of sediments, and control water level elevations as compared to historical free-flowing conditions of the river. The controlled release of water from the dams and the removal of upland vegetation contribute to increased water temperatures that impact the water quality and the aquatic environment in the API. For this reason, baseline aquatic habitat conditions within the API are degraded from their natural condition. However, the aquatic habitats within the API do provide suitable habitat for a variety of aquatic species including salmon, steelhead, bull trout, Pacific Eulachon, and North American green sturgeon, as well as a variety of other native and non-native aquatic species.

Upland development also impacts the quantity and quality of terrestrial habitat and wildlife conditions. Development over time within the API has led to terrestrial habitats that consist primarily of either unvegetated impervious areas, managed landscaped areas, or natural habitats which have been fragmented by development and infrastructure. These habitats provide limited habitat function for terrestrial wildlife species. However, some of the forested habitats on the Washington side of the river do provide potentially suitable habitat for terrestrial and avian species, including sensitive species such as western gray squirrel, Washington ground squirrel, California mountain kingsnake, bald eagle, peregrine falcon, Vaux's swift, and western grebe.

Over time, the API is likely to continue to see further development (Exhibit 4-2) that may result in reduction in fish and wildlife habitat as a result of the projected regional growth. The Project would directly impact fish and wildlife through construction and operation of the replacement bridge. Potential impacts to fish and wildlife associated with the Project would include temporary impacts associated with water quality, terrestrial and underwater noise, and temporary habitat disturbance during construction; permanent impacts to terrestrial and aquatic habitats associated with the replacement structures; and beneficial impacts to water quality associated with improvements in stormwater treatment.

Project impacts to fish and wildlife resources would be minimized through compliance with federal, state, and local regulatory requirements; however, the Project could contribute to cumulative adverse impacts to these resources. Most future projects that could adversely affect fish and wildlife would be required to secure permits from federal, state, and local jurisdictions which require that impacts to fish and wildlife habitat be avoided and minimized. Federal permit review requires consultation under the Magnuson-Stevens Act and ESA, which require the implementation of impact avoidance and minimization measures in order to further minimize potential impacts to federally-listed threatened and endangered species and habitats. Compensatory mitigation potentially including restoration would also be required to document achievement of no-net-loss of function consistent with regulatory requirements.

The Project and other current projects and RFFAs would increase the amount of impervious surface area within the API, which could increase the quantity of stormwater runoff to the Columbia River and potentially impact aquatic organisms. All projects would be subject to stormwater regulations; therefore, risks of runoff to the Columbia River would be greatly diminished. Some projects, such as the replacement bridge, would have a net benefit on water quality in the Columbia River by providing stormwater containment and treatment, as well as spill prevention mechanisms where they currently do not exist in the API. While the Project would contribute to incremental cumulative impacts on fish and wildlife resources, the Project, other current projects, and RFFAs would be required to avoid, minimize, and mitigate for impacts to achieve no net loss of fish and wildlife resources. In addition, projects would not be constructed simultaneously, helping to spread potential impacts over time. As such, the Project would have only a minimal contribution to cumulative impacts to fish and wildlife resources and no mitigation for cumulative impacts is warranted.

Geology and Soils

The geologic and soil conditions in the API are a result of prehistoric geologic movement that created the Cascade Mountains and Columbia River Gorge. The soils on the Washington side of the existing bridge are silt loams. These soils are moderately deep and well drained, although when wet they have a slow infiltration rate. Runoff potential is moderate. The soils on the Oregon side are composed of xerofluvents. These soils are generally well drained and permeable.

Current projects and RFFAs could increase the potential for erosion and contribution of sediments to the Columbia River and surrounding areas. The build alternatives would likely have minimal contributions to erosion and sedimentation. The Project, taken together with current projects and RFFAs, would represent a larger potential for erosion and contribution of sediments to the Columbia River and surrounding areas than any of the projects by themselves. These projects, however, would not be constructed simultaneously and any negative impacts would not occur at the same time. In addition, the replacement bridge would be able to better withstand geologic and natural events than the existing bridge. With the implementation of appropriate erosion and sediment control measures and adhering to seismic design standards, the individual impacts of each project could be minimized, and the overall cumulative impacts would be reduced; therefore, no mitigation for cumulative impacts is warranted.

Hazardous Materials

Increased development in the API over time and past industrial development within the API has resulted in the presence of hazardous materials and site contamination. Information obtained from the Southwest Washington RTC identified potential hazardous material located around the former City of Bingen and City of White Salmon docks, which are located on the submerged portions of the Vanguard Nursery property and the White Salmon TFAS. Potential hazardous materials may have resulted from activities associated with the use of these docks in the late 1800s (RTC 2003). In addition to upland sites that have the potential to include hazardous material contamination, the hazardous material conditions in the API are also influenced by the U.S. Navy transport of dismantled nuclear reactor compartments via barge on the Columbia River from Bremerton, Washington (downriver of the API) to the Port of Benton (upriver of the API).

The Project along with other current projects and RFFAs could alter hazardous conditions over time through development and ground disturbing activities that could expose existing contaminated materials. Only minor impacts are anticipated, however, which would be mitigated for through the proper handling and disposal of any hazardous materials during construction. For construction of the Project and other current projects and RFFAs, spill prevention plans would be required to account for unforeseen spills. Removal of the existing bridge and associated equipment, as well as demolition and construction associated with other current projects and RFFAs, may present issues of lead-based paint and/or asbestos exposure. This would be mitigated by pre-removal surveys and assessments and, if necessary, implementation of a hazardous materials containment plan in accordance with regulatory requirements. A potential beneficial impact of the build alternatives, and other current projects and RFFAs, is the removal of hazardous materials that could exist, thus reducing future adverse impacts to human health and the environment. This removal could prevent potential migration of hazardous materials through soil and groundwater over time. In addition, the concrete deck of the build alternatives would prevent vehicle spills from discharging directly into the Columbia River, which occurs with the streel-grated deck of the existing bridge. Therefore, the Project would contribute to a cumulative benefit to hazardous materials conditions in the API; no mitigation for cumulative impacts is warranted.

Historic Resources, Archaeological Resources, and Traditional Cultural Properties

The APE for cultural resources is wholly located within the cumulative API and includes portions of both Washington and Oregon around the existing bridge. The present cultural resource conditions in the API are a result of the early human history described in Section 4.1, Analysis of Cumulative Impacts, and the subsequent modern development that has altered or may have removed some historic and cultural sites and resources over time. The majority of the APE and API has undergone a high level of ground disturbance from past development.

Archaeological investigations of the area have discovered precontact cultural materials in the APE, as the location is within the traditional territory of several tribal groups and bands. Several other precontact archaeological sites have been recorded within a 1-mile radius of the bridge. In the Washington portion of the APE, these previously recorded cultural resources include precontact archaeological sites and an ethnographic village. In the Oregon portion of the APE, fewer precontact sites have been previously recorded which is likely a result of environmental and historic anthropogenic actions. Of the previously recorded precontact and historic sites, many are located along Hood River and in upland areas adjacent to the APE. In addition, the White Salmon TFAS and the East White Salmon Fish Processing Facility (addressed in the Treaty Fishing Rights section below) are important cultural sites located on the northern bank of the Columbia River near the existing bridge.

As the region develops, changes in the cultural setting and potential impacts on cultural resources may occur. The build alternatives would support the surrounding population growth that may alter cultural resource sites and settings within the region. Because population growth in the region has been relatively modest, significant impacts to cultural resources are not expected. The pace of growth in the region may allow for continued cooperation with tribes and agencies on measures to protect important cultural sites and characteristics.

As development continues in the API, historic resources are likely to be altered and removed as a result of other current projects and RFFAs. Ten historic resources that are listed or are potentially eligible to list on the NRHP are located within the APE. Each build alternative would have no effect on one historic resource, no adverse effects on eight historic resources, and an adverse effect associated with the removal of the existing bridge; therefore, the Project would contribute to adverse cumulative impacts to historic resources. In compliance with Section 106 of the NHPA, FHWA, ODOT and the Port will prepare a mitigation plan to resolve the adverse effects associated with removing the existing bridge. The Oregon SHPO, Washington State DAHP, tribes, Section 106 consulting parties, and public will have an opportunity to provide input on the draft mitigation plan. The final mitigation plan will be published as part of the Programmatic Agreement in the combined Final EIS/ROD.

Apart from the existing bridge, Alternative EC-2 would also impact a small portion of the White Salmon TFAS and Alternative EC-3 would impact a small portion of the East White Salmon Fish Processing Facility. These impacts are associated with construction and right-of-way acquisition and are further described in the Treaty Fishing Rights section below and Chapter 3.5. Impacts are not anticipated to affect the use of the sites. Construction of the build alternatives would generate temporary noise and visual impacts within and beyond the APE that may disturb Native American cultural and ceremonial practices at TCPs within and near the APE.

Under Alternative EC-2, documented archaeological sites would be avoided by the bridge and connecting roadway alignment; however, associated bridge infrastructure could have adverse impacts to an archaeological site (precontact lithic scatter) that has been evaluated and recorded as eligible for listing on the NRHP. The bridge and connecting roadway alignment for Alternative EC-3 and associated bridge infrastructure would likely adversely impact this archaeological site. Based on the results of archaeological surveys identifying these sites, additional investigations are planned for the Project. Further findings will be summarized in the combined Final EIS/ROD.

Current projects and RFFAs, as well as either of the build alternatives, could encounter unknown archaeological resources during ground disturbance and have the potential to contribute to a cumulative impact on archaeological resources. Many of the current projects and RFFAs would include some level of ground disturbance and/or grading for construction. The build alternatives added to other development activities would result in an incremental increase in the risk of encountering or disturbing archaeological resources. However, an Inadvertent Discovery Plan would be prepared for the Project and likely be required for current projects and RFFAs that include ground disturbance, which would identify measures to address any archaeological resources encountered during construction to minimize impacts to these resources.

As mentioned above, Alternative EC-2 could have adverse impacts to an archaeological site and Alternative EC-3 would likely adversely impact this site. Additional investigations are planned for the Project that would delineate site boundaries so impacts can be more specifically evaluated. If a finding of adverse impacts to any archaeological sites are confirmed, then a mitigation plan to resolve adverse impacts associated with the build alternatives will be reported in the combined Final EIS/ROD. Oregon SHPO, Washington State DAHP, and the tribes will be consulted with on the preparation of the mitigation plan. No other current projects and RFFAs have been identified in the vicinity of this site besides Bridge Park; it is unknown if any adverse impacts to archaeological resources would result from this park's development.

Land Use

The developed areas of the API contain a variety of land uses consisting of residential, commercial, recreational, industrial, and governmental uses, primarily in the cities of White Salmon, Bingen, and Hood River. The existing bridge has existed for over 90 years and development has oriented around this access. As such, land uses on both sides of the river have become dependent on this access for customers, employees, freight, and tourism. The City of Hood River has a higher concentration of existing development within the immediate vicinity of the existing Hood River Bridge than the other jurisdictions. Based on a review of aerial photography, historically, land uses surrounding the existing bridge landings were agricultural in nature. In the 1950s, the City of Hood River side began to develop with more commercial and transportation uses when the I-84 interchange was constructed. Since that time, both sides of the Columbia River have continued to develop with an increasing amount of commercial development and supporting infrastructure.

The replacement bridge would enhance conditions for existing and future land uses by accommodating additional modes of travel between states, increasing access, and improving the movement of goods and services throughout the region. Various projects are planned throughout the API that would continue to urbanize lands in accordance with city and county comprehensive plans. The majority of RFFAs identified within the API are within designated Urban Areas, as development outside Urban Areas is limited by the CRGNSA Management Plan. The conversion of approximately 2.8 acres under Alternative EC-2 and 3.4 acres under Alternative EC-3 represents a conversion of approximately 0.06 percent and 0.07 percent, respectively, of the approximately 4,600 acres of land within the API, which is negligible in the context of the other anticipated land use changes expected with the current projects and RFFAs. Neither of the build alternatives would be expected to cause induced growth in the area. Therefore, the Project would not contribute to cumulative impacts on land uses and development, and no mitigation for cumulative impacts is warranted. Due to the enhanced conditions under the Project, such as improvements to the movement of goods and services and improved pedestrian and bicycle connectivity from the shared use path, the replacement bridge would have a cumulative benefit to land use conditions within the API.

Noise

The API contains a variety of existing land uses that contribute to the noise environment. The Oregon side of the API has a higher concentration of development within the immediate vicinity of the existing Hood River Bridge than the Washington side. Traffic noise from the existing bridge, SR 14, and I-84, including the hum generated by vehicles crossing the steel grated deck of the existing bridge, are the dominant noise sources in the area, with minor contributions from aircraft and trains along both Washington and Oregon shores. The primary noise receptors are the users of facilities adjacent to the bridge landings on the Washington and Oregon sides, as well as river users. Over time, land use changes, population growth, and increased traffic volumes are likely to occur, which would increase noise levels in the API. The primary noise receptors are the users of facilities adjacent to the bridge landings as well as river users.

Construction activities from the Project and other RFFAs would generate noise during the construction period, which would be temporary in nature, and would be required to meet noise control standards. It is unlikely that other RFFAs near the bridge would be constructed simultaneously, therefore, Project construction noise would unlikely be adding to construction noise from RFFAs. Therefore, the Project construction noise would not likely be a cumulative impact.

A noise analysis was performed for the Project comparing existing roadway noise conditions to predicted roadway noise levels, which accounts for changes in population and employment for the area through 2045. The noise analysis was based on transportation demand forecasting modeling that generates projected traffic volumes and includes the impacts of unmet demand on the transportation system from future population growth, housing, and land use changes. Modeled noise levels for 2045 near the Project are projected to be within 3 dBA of existing noise levels. Three dBA is generally considered the smallest change in sound level that a human can detect. As the amount of noise increase is projected to be negligible under the Project and future conditions in the area, no mitigation for cumulative noise impacts is warranted.

Social, Economic, and Environmental Justice

The cities of White Salmon, Bingen, and Hood River are economically and socially diverse communities. The local and regional economies within the API were built on agricultural and forest product industries which continue to be a focus of economic growth along with a recent rise in recreational, tourism, service-oriented, and manufacturing sectors. Social diversity within the cities of White Salmon, Bingen, and Hood River include higher concentrations of racial minorities, Hispanic or Latino minorities, low-income households, limited English proficient households, no vehicle households, elderly and children, and disabled residents than the corresponding county averages. In the cities of White Salmon and Bingen, more households depend on Social Security when compared to Washington state as a whole. The City of Bingen's median household incomes are higher than neighboring City of White Salmon and are on par with Klickitat County, and all three geographic areas have substantially lower median household incomes than the state. The proportion of the City of Hood River household incomes that depend on Social Security are lower than Hood River County and Oregon. The City of Hood River median household incomes are lower than Hood River County and lower than the state median.

The economies of Klickitat County and Hood River County can largely be viewed as an integrated regional economy. Although both counties have industrial and commercial enterprises, the region provides a bi-state workforce and access to complimentary businesses that strengthen each county's economy. The Hood River Bridge provides the only direct transportation connection between the cities of White Salmon and Bingen, Washington, and Hood River, Oregon. As a result, the communities and businesses on both sides of the Columbia River have access to a greater number of services, retail businesses, industrial operations, recreation and tourism activities, a shared workforce, and access to alternate routes via

I-84, SR 14, and OR 35, which are particularly important in emergency situations. There is a significant amount of interstate freight transport between Hood River County and Klickitat County via the Hood River Bridge for interrelated industries. For example, logging trucks connect the wood-related industries on either side of the river, and fruit haulers cross over from the growers in the Hood River Valley to the packing and storage facilities at the Underwood Fruit & Warehouse in Bingen. The economic growth experienced in the region has occurred with the bridge playing a key role connecting the economies on both sides of the river.

Further deterioration of the existing bridge could occur, resulting in more restrictive weight limits which could impact interstate truck travel. Deterioration of the existing bridge could also lead to an increase in bridge tolling due to increased maintenance costs. There are a variety of current projects underway and RFFAs in the vicinity of the bridge, including residential, recreational, industrial, environmental, commercial/mixed-use, transportation/utility and bicycle/pedestrian focused projects. These projects would likely benefit community populations through increased efficiencies in facility operations, development of new community hubs, and overall improvements to the API with concern to community livability.

Historical trends in population and community growth would be expected to continue until the existing Hood River Bridge reaches the end of its operational life. At that time, the bridge would be closed to all cross river vehicular traffic. All services that residents seek on opposite sides of the river would require substantial detours resulting in additional time to reach certain destinations and increased costs (e.g., fuel, automobile maintenance). The nearest bridges would require a 40-mile one-way detour for a trip that was previously 1 mile. Vehicles would travel 22 miles to 24 miles one-way and out-of-distance to cross the Columbia River at Cascade Locks (Bridge of the Gods) or The Dalles Bridge (US 197). Access, for residents of both counties, to community resources, such as places of worship, healthcare providers, and public services would be impacted. Native Americans, especially those traveling cross-river to access treaty fishing sites, would need to cross the Columbia River at The Dalles or Cascade Locks. These detours could have a substantial impact on their travel depending on where their trips originate. Cumulative impacts to treaty fishing sites is addressed below in the Treaty Fishing Rights section.

Populations and businesses on the Oregon side would still have connections to I-84 – the only nearby interstate highway. However, local Washington communities would need to travel over 20 miles to alternate bridge crossings of the Columbia River to reach I-84. In addition, it would be assumed that some Washington residents could substitute City of Hood River services with those found in the City of The Dalles, which would be about half the distance of traveling to the City of Hood River via alternate bridges.

The eventual closure of the Hood River Bridge would reduce the employment pool that currently supports industry and business on both sides of the Columbia River in the API. Moreover, the existing bridge closure could dampen opportunities for future economic growth in the region, particularly on the Washington side, due to the loss of this transportation link. In a worst-case scenario, White Salmon and Bingen could experience severe economic changes. These cities would lose direct connection to the only interstate in the area (I-84). As a result, tourists and recreationists coming to Hood River would not be able to cross over to Washington; freight would need to travel 20 miles up or down SR 14 before it could access I-84; new business may be deterred and locate in other areas with better interstate highway access; and White Salmon and Bingen could be bypassed altogether if regional traffic crosses the Columbia River at The Dalles or Cascade Locks bridges. The loss of business activity and jobs would lead to fewer tax revenues being collected. The most substantial being sales tax and business and occupation tax revenues in Washington and business income tax revenues in Oregon.

Direct economic impacts of both build alternatives would include acquisition and conversion of private property to public right-of-way, which is exempt from property taxes. In addition, Alternative EC-3 would also displace businesses, as described in the Land Use Technical Report (Appendix I). If displaced businesses relocate outside of local jurisdictions or choose not to reopen, this would reduce local tax revenues. Changes in parking availability, noise, visual conditions, or access could also impact economic conditions under each of the build alternatives.

Community connectivity would be enhanced through the creation of a new shared use path included in the build alternatives, which would provide a new mode of travel for river crossing as well as the additional benefit of new views of the Columbia River Gorge and enhanced recreational opportunities. The addition of bicycle and pedestrian facilities would create a non-motorized travel option for river crossing, benefiting low-income populations, households without vehicles, and children, and it would provide accessible facilities for the disabled. Improved pedestrian access can positively impact the convenience, visibility, and desirability of surrounding residential and commercial properties and patronage of nearby retail businesses. Additional pedestrian activity could create a synergy of business owners and employees being more interested in relocating where there is convenient pedestrian access to the replacement bridge, which could lead to more dense and mixed land uses around the Klickitat County and Hood River County communities and related increased economic activity.

The build alternatives would provide an improved regional connection between the Klickitat County and Hood River County communities without the width or weight restrictions that currently hinder or divert some freight shipments to other Columbia River crossings, potentially benefiting existing and future industrial and commercial businesses in the area. The replacement bridge would provide wider lanes and a shoulder in each direction for motor vehicles, providing more comfortable travel conditions for drivers and pull-over areas for disabled vehicles. Travel times for transit service providers using the bridge could be expected to improve, potentially benefitting transit-dependent households. The shared use path would increase opportunities for pedestrian and bicyclists to cross the river, which could draw more recreation and tourism business to the cities of White Salmon, Bingen, and Hood River.

In order to finance a replacement bridge, increased bridge tolls would need to be considered. It is likely that any changes to the tolling rates and/or system, including making the system entirely electronic, could introduce barriers and have a disproportionate burden on low-income bridge users. Although the final toll rates and bridge ownership are unknown at this time, four build alternative toll scenarios were developed for the Project and are included in the Social and Economic Technical Report (Appendix M).

As the primary cross-river connector between communities for employees, consumers, trade, and recreationalists, the replacement bridge would support other current projects and RFFAs as well as enhance community cohesion. Through implementation of the mitigation measures described in the Social and Economic Technical Report (Appendix M), including measures to mitigate the impacts of tolling on low-income populations, the Project would not be anticipated to contribute to cumulative impacts on social elements, including population and community growth, or environmental justice populations. Furthermore, creation of a new shared use path would improve pedestrian access and community connectivity, thus contributing to a cumulative benefit on social and environmental justice conditions in the API. Therefore, no mitigation for cumulative impacts to social and environmental justice conditions is warranted.

The replacement bridge, as well as other planned transportation and development projects, would be expected to benefit the regional economy, including job creation and increased spending for other developments. Construction employment would rise substantially as the replacement bridge is constructed. Although this employment increase would be of limited duration, no other planned capital improvement project in the region is as large as the Project. It is anticipated that there would be a short-term cumulative impact on the available labor force, the need to import specialty labor into the region, the potential for other projects to be delayed due to a lack of available labor, and the resultant strain on regional resources to accommodate the imported labor pool.

To reduce the cumulative impact of imported construction workers on available housing resources, the Port could consider requiring the contractor to submit a worker staffing and accommodation plan as either part of their bid proposal or as one of their early submittals after award of contract. No other mitigation to address cumulative impacts to economic conditions is warranted.

Park and Recreation Facilities

Recreation-based activities are a substantial component of the regional economy. In general, park and recreation facilities in the API are associated with the Columbia River. The emergence of water-based recreational sports (windsurfing, kayaking, kiteboarding, etc.) have contributed to a shift in the regional economy from lumber and timber industries to tourism and recreation. The establishment of the CRGNSA also played a major role in the preservation of the region's natural resources for economic and recreation purposes. Over the last decade, the Port has developed numerous waterfront sites for recreation that have contributed to the growth of the recreation and tourism industry.

Park and recreation facilities could be affected by actions in the API that result in property acquisitions, access changes, or changes to the setting such as noise, water or air quality, or visual impacts. However, recreation amenities and conditions in the API would likely be enhanced in the reasonably foreseeable future with or without the proposed Project through several planned improvements included in the current projects and RFFAs. These include the development of Bridge Park in the City of White Salmon, Phase 2 of the Waterfront Park in the City of Hood River, and the development of Confluence Business Park in the City of Hood River. In addition, bicycle and pedestrian improvements, such as the construction/extension of other trails in the API (e.g., the Historic Columbia River Highway trail) could improve connectivity and access to park and recreation facilities in the region. Likewise, the Project would be anticipated to improve non-motorized access to park and recreation facilities via the new shared use path with minimal adverse impacts on these facilities. Thus, the Project would contribute to a cumulative benefit to park and recreation facilities; therefore, no mitigation for cumulative impacts is warranted.

Transportation

The existing Hood River Bridge provides an essential transportation link between Oregon and Washington, connecting the communities of White Salmon, Bingen, and Hood River. The transportation conditions in the API are a result of steady growth in the region over the last several decades. The existing (2018) average daily traffic for the bridge is approximately 16,500. The bridge has experienced relatively stable traffic growth over the last 15 years. From 2002 to 2017, annual bridge volumes increased from approximately 3 million to 4.4 million annual trips, an average annual linear growth rate of 2.9 percent. In addition to vehicle traffic, the bridge impacts commercial and recreational traffic on the Columbia River. The vertical lift span to the bridge was added in 1938 following an increase in commercial river traffic and the downstream construction of the Bonneville Dam. In 2017, there were 3,435 upbound vessel trips and 3,518 downbound vessel trips, which more than doubled from 2008 (USACE 2017).

Projected traffic volumes in the API would be expected to increase regardless of whether the bridge is replaced or not. Current projects and RFFAs, including new housing, commercial, and industrial development, would contribute to anticipated population growth, which would in turn increase traffic volumes in the API. Roadway projects in the area typically use a common set of future traffic volumes and incorporate RFFAs to analyze the future traffic conditions; thus, the traffic analysis for this Project considers the cumulative impacts of multiple projects in the API. Each build alternative would benefit future transportation conditions. For example, the increased speed limits for the replacement bridge would decrease travel time for motor vehicles. Response times for emergency responders would be expected to improve with wider lanes and shoulders, allowing vehicles to safely pull off on the bridge to make way for emergency response vehicles. Existing heavy vehicle restrictions would be eliminated, allowing for more direct travel and travel time savings for some freight vehicles that are currently prohibited from using the current bridge.

Marine vessels traveling on the Columbia River in the future would likely be similar in type and quantity as existing vessels being used today. During Project construction, vessel navigation would be temporarily affected during construction of the replacement bridge and the removal of the existing bridge; however, vessel passage would be maintained. In the long-term vessel passage under the replacement bridge would improve as a result of a much wider clearance that would resolve the navigation hazards. The vertical clearance of the replacement bridge would be reduced; however, all vessels currently traveling past the Hood River Bridge today would be able to either travel under the replacement bridge or adjust the vessel in order to pass under the bridge.

The replacement bridge would also offer a new shared use path for people who want to walk or bicycle between Oregon and Washington, connecting to existing infrastructure on both sides of the river. Overall, the Project would benefit vehicle, marine, and pedestrian and bicycle travel across the river and would contribute to cumulative transportation benefits for the region. No mitigation for cumulative impacts is warranted.

Treaty Fishing Rights

Tribal fishing communities have been present in the Columbia River Gorge since time immemorial. Fishing, hunting, and gathering were and continue to be central practices of their culture. Specifically, fishing for salmon, steelhead, lamprey, sturgeon, and other species has been a focus of their presence along the Columbia River. Fish caught in the Columbia River provide sustenance and ceremonial resources that were and continue to be of great importance to indigenous tribes on the river (CRITFC 2014). In 1855, a number of tribes with ties to the Columbia River entered into multiple treaties with the U.S. government; becoming four federally-recognized tribes while ceding millions of acres of their lands to the U.S. The tribes reserved lands that now constitute their reservations, as well as the rights to fish at their usual and accustomed places and the rights to hunt, gather, and graze. This included both on and off their reservations, with those rights continuing to the present. The four tribes with those reserved rights are commonly referred to as the Columbia River treaty tribes and include the Warm Springs, the CTUIR, the Yakama Nation, and the Nez Perce Tribe (CRITFC 2020a).

Beginning in 1923, the USACE surveyed the Columbia River and recommended numerous dams to provide navigation, hydropower, flood control, and irrigation (Wilma 2006). A consequence of the subsequent dam building on the Columbia River was that traditional tribal fishing grounds along the Columbia River were inundated behind the dams and fish populations were severely impacted (CTUIR 2019). To account for the tribal fishing grounds that were inundated, the U.S. Congress set out to provide various sites along the river within what is now known as Zone 6; a 147-mile stretch of the river between the Bonneville and McNary dams reserved exclusively for commercial fishing by the Columbia River treaty tribes (CTUIR 2020b). In addition to the fishing sites, fish processing facilities were established along the Columbia River to process and sell fish in a safe and clean environment (USACE 2013). Three treaty fishing sites and one fish processing facility are

located near the existing bridge, including the White Salmon TFAS (bordering the existing bridge to the west), East White Salmon Fish Processing Facility (roughly 0.25 mile east of the existing bridge), Underwood In-Lieu site (roughly 1.5 miles west of the existing bridge), and Stanley Rock TFAS (roughly 1.5 miles east of the existing bridge) (CTUIR 2020c). Another fishing site, owned by the Nez Perce Tribe, is located roughly 1.25 miles west of the existing bridge near the Underwood In-Lieu site adjacent to the White Salmon River.

The four fishing sites and fish processing facility would experience different degrees of direct and/or indirect impacts from the Project that may contribute to cumulative effects. Due to the proximity of the replacement bridge alternatives to the White Salmon TFAS, especially under Alternative EC-2, impacts to this site would be the greatest compared to the other sites. The White Salmon TFAS is a roughly 10-acre site that includes camping areas, a fish cleaning station, floating dock and boat ramp, net repair and storage facilities, and parking. The site also includes a structure for ceremonial activities. Tribal fishers reside at the White Salmon TFAS year-round, with over-lapping short-term and long-term stays at the site.

Construction related impacts of the Project in combination with other current projects and RFFAs would temporarily include increased noise levels. The Project, other current projects, and RFFAs would likely be constructed at different times, possibly with some overlap, so noise impacts would likely occur over time and vary by construction activity types and location. Apart from Bridge Park, proposed under the existing bridge next to the White Salmon TFAS, no other current projects and RFFAs have been identified in the vicinity of the White Salmon TFAS. Increased noise from construction would be heard at the East White Salmon Fish Processing Facility, especially under Alternative EC-3, but would not impact the functionality of the site. Due to the Project and other current projects and RFFAs being concentrated near the existing bridge and the other three fishing sites (Stanley Rock TFAS, Underwood In-Lieu, and the Nez Perce Tribe property) being located in more rural locations along the shoreline, construction noise is not expected to significantly impact these sites.

Construction-related activities would also result in increased particulate matter in the form of fugitive dust, as well as exhaust emissions from material delivery trucks, construction equipment, workers' private vehicles. Any construction work performed would be required to take precautions limiting fugitive dust emissions to not to create a nuisance, as well as limit vehicle emissions. Dust and exhaust emissions from construction projects would be short-term in duration and likely occur at different times and locations. All projects would be required to comply with local and state standards that regulate air, dust, and noise impacts and stipulations to minimize the adverse effects.

The construction of projects near or along vehicle routes that tribal fishers take to sites could result in temporary traffic congestion and delays, as well as minor detours to get around construction areas. While vehicle access to fishing sites and the process facility may be impacted by construction, access would be required to be maintained for construction of the Project and other current projects and RFFAs. As mentioned, projects would likely be constructed at different times, limiting access impacts. Long-term, as the API continues to develop, tribal fishers may experience increased congestion and delays in reaching sites; however, roads would have to meet certain mobility standards and road improvement projects would be planned accordingly to address congestion overtime. The Project would require in-water construction; some of the other current projects and RFFAs would be located near shorelines but would not involve in-water construction. River access to/from the fishing sites would be maintained throughout the duration of construction of the Project with some limitations for safe navigation around construction barges, equipment, and activities. These limitations would not significantly impact fishing vessel navigation to these sites or contribute to cumulative effects on river access to the fishing sites.

Based on the information presented above, cumulative impacts from construction noise, dust, emissions, and vehicle and vessel access from the Project and other current projects and RFFAs to the fishing sites and processing facility are expected to be minor and no mitigation is warranted.

Potential impacts to fish species and habitat from the Project near the fishing sites would be mitigated through compliance with federal, state, and local regulatory ordinances, including employing BMPs prior to and during construction, and by securing permits that require no net loss of fish resources (Section 3.17, Fish and Wildlife). No other in-water projects that could impact fish species or habitats are occurring under current projects or RFFAs.

The Project, in combination with other current projects and RFFAs would contribute to increased impervious surfaces and stormwater runoff potential, which could have a cumulative impact to water quality and aquatic organisms near the fishing sites. Risks of runoff to the river would be greatly diminished by compliance with stormwater regulations and some projects, such as the replacement bridge, may benefit water quality in the Columbia River by providing stormwater containment and treatment, as well as spill prevention mechanisms, where they currently do not exist.

Based on the information presented above, cumulative impacts to fish species and habitat, as well as water quality near the fishing sites from the Project and other current projects and RFFAs are expected to be minor due to mitigation and compliance with regulations; no mitigation is warranted.

Alternative EC-2 would require permanent easements on/over a submerged portion of the White Salmon TFAS parcel for the placement of a bridge pier and overhead bridge deck. Alternative EC-3 would require a permanent easement for highway improvements along SR 14 (Section 3.5, Treaty Fishing Rights). While these easements would not impact the functionality of the sites, they would constitute an encroachment of right-of-way uses on tribal land. Based on the type and location of the other current projects and RFFAs, no other easements or property acquisitions on the treaty fishing sites or processing facility are expected.

Future development near the existing bridge would include pedestrian and bicycle transportation improvements that would increase pedestrian and bicycle access for tribal fishers traveling to sites. However, increased development and densification of uses near the White Salmon TFAS, such as the shared use path on the replacement bridge or Bridge Park on the parcel directly east of the White Salmon TFAS, would increase visibility of this fishing site that may lead to unauthorized access by non-tribal members. A decrease in privacy for ceremonial activities and residents of the site could also occur. These impacts would be mitigated by providing increased signage and fencing or other barriers to this site to reduce unauthorized access, as well as providing screening of the site on the replacement bridge near the shoreline (Section 3.5, Treaty Fishing Rights).

Vegetation and Wetlands

The vegetation and wetland conditions in the API are varied based on the range of current and historical uses that occupy the land. As the API has developed over time, vegetation and wetlands have been reduced and altered, as well as become fragmented. On the Washington side, the shoreline area surrounding the existing bridge landing and extending east through Bingen is largely characterized by commercial and industrial development. The shoreline areas further east and west of the bridge location are primarily vacant, but the vegetation and wetland conditions in these areas have been impacted by the development of SR 14 and the BNSF Railway line. A terraced bank rises from the Columbia River to an elevation of approximately 600 feet. The area north of SR 14 and to the top of the bank is more densely vegetated. The south side of the API is a highly developed urban area. Vegetation is sparse and consists mostly of non-native and ornamental species, with scattered native species.

Dams on the Columbia River constructed to generate hydro-electricity and to control water flow have reduced the presence of wetlands in the API. Construction of the Bonneville Dam and resulting Bonneville Pool behind the dam have flooded historic wetlands, and very few – if any – wetlands were created by the flooding in the API. In addition, the construction of the BNSF Railway and regional highway system, urbanization, and agricultural activities have further impacted wetlands locally and regionally.

Cumulative impacts to vegetation, including shoreline riparian habitat vegetation, and wetlands could result from the Project and other current projects and RFFAs that disturb existing vegetation and wetlands. The Project's contribution to cumulative impacts on vegetation and wetlands would likely be minimal due to the presence of existing development and the existing disturbed nature of the vegetation and wetland communities in the areas directly and indirectly affected by the Project. In addition, the Project and other future development would need to comply with local, state, and/or federal regulations that require protection of wetlands and riparian habitats, thereby minimizing the Project's and other future development's contribution to cumulative impacts to these environments. Impacts would also be minimized through landscape planting standards and the replanting of native vegetation. As such, the Project would only have a minimal contribution to cumulative impacts, and no mitigation for cumulative impacts is warranted.

Visual Resources

The visual resources in the API have been shaped by the natural landscapes of the river and mountains, as well as historic industrial working waterfronts on the Washington and Oregon sides of the Columbia River. The mountains on either side of the Columbia River offer expansive views of the Columbia River Gorge, but also define the limits from which the existing Hood River Bridge can be seen. The river and natural elements of the Columbia River Gorge, such as land form and vegetation, are the dominant visual features for most views in the AVE; however, the existing bridge and urban areas of White Salmon, Bingen, and Hood River can be prominent dependent on where the viewer is located in the Columbia River Gorge compared to these urban areas. The green color of the existing bridges steel components helps the bridge blend in visually with the vegetation along the northern shore of the river. The gray concrete piers, structure, and straight lines are consistent with the structures and land uses in the urban areas.

New development anticipated in the API would increase the intensity of uses but is unlikely to result in dramatic changes to the overall visual character of the AVE as CRGNSA and local land use regulations would regulate future land use changes and maintain visual quality in the API. Development would likely continue within the designated Urban Areas at a similar pace, and land use and development in the surrounding areas would continue to be constrained in both intensity and appearance by the CRGNSA Management Plan.

Because the replacement bridge would be of a comparable scale and form of the existing bridge, and materials and architectural detail would be designed so that the bridge is harmonious with the landscape, the Project would not adversely alter landscape views toward the bridge. The Project would not be anticipated to contribute to cumulative impacts on visual quality within the AVE. No mitigation for cumulative impacts is warranted.

Waterways and Water Quality

The waterways and water quality conditions in the API are a result of increased development on and adjacent to the portion of the Columbia River in the API. The existing Hood River Bridge crosses the main stem of the Columbia River at river mile 169.8. The Oregon side of the river has been heavily modified through marina construction, armoring of the river bank, and construction of beaches and jetties, and retains little if any natural riparian habitat. Since the publishing of the Draft EIS, Ecology, and Oregon DEQ, through their partnership with EPA Region 10, have made efforts to improve water quality for the segment of the Columbia River within the API.

All current projects and RFFAs near the Columbia River, as well as the Project, could increase turbidity and present spill hazards during construction. Each project would contribute minor impacts but taken together they would cumulatively contribute to greater potential impacts on the Columbia River than any of them by themselves. The Project and future development would also increase impervious surfaces in the area, which would increase the quantity of stormwater runoff. The build alternatives, other projects, and RFFAs would be subject to water quality regulations. Compliance with applicable regulations and permits obtained for each project would reduce the risk of water quality degradation during construction. Moreover, the Project would benefit water quality in the long term by containing and treating stormwater and potential spills prior to reaching the Columbia River. As such, the Project would not contribute to adverse cumulative impacts to waterways and water quality; no mitigation for cumulative impacts is warranted.

Additional detail on cumulative impacts is provided in the Cumulative Impacts Technical Report (Appendix C).

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5. PUBLIC INVOLVEMENT, AGENCY COORDINATION, AND TRIBAL CONSULTATION

Chapter 5 provides a summary of public outreach, tribal consultation, and agency coordination activities that have occurred since the Project began, specifically focusing on activities conducted to prepare the Draft EIS and the Supplemental Draft EIS.

BACKGROUND

Since its inception in 1999, planning and development of the build alternatives for the Project have included an active public involvement component as well agency coordination and tribal consultation. Early planning efforts were guided by a unique collaborative partnership between the FHWA and three advisory committees that included citizens representing varying interests, local elected officials and government employees, and state and federal resource and regulatory agency representatives. Various outreach methods were utilized to collect meaningful information, including public meetings, opinion surveys, stakeholder interviews, media releases, and a Project-based website.

FHWA, WSDOT, ODOT, and Southwest Washington RTC served as the lead agencies for the Draft EIS. As the Draft EIS was being developed, the Project team sought input from the public and local, state, and federal agencies with an interest in the Project. FHWA also initiated tribal consultation consistent with Section 106 of the NHPA and Executive Order 13175 Consultation and Coordination with Indian Tribal Governments.

In 2010, the Bridge TS&L Study for the Project was initiated. The TS&L Study included meetings with a bi-state committee of elected officials and agency staff, a design workshop with stakeholders, several focus groups, and a public open house. Through the study, completed in 2011, a fixed-span, concrete segmental box girder bridge type was identified as the recommended bridge type.

All these activities have fostered joint planning and decision-making throughout the Project to develop design concepts and arrive at a Preliminary Preferred Alternative, which was evaluated in the Draft EIS and refined in the Bridge TS&L Study. Previous public and agency involvement efforts have been instrumental in informing the public involvement and agency and tribal coordination undertaken for the Supplemental Draft EIS.

OUTREACH DURING THE DRAFT EIS

Agency Coordination

Various activities were undertaken to comply with NEPA during the preparation of the Draft EIS. The Federal NEPA lead agency for the Draft EIS was FHWA and cooperating agencies included the USCG, WSDOT, ODOT, and Southwest Washington RTC. An NOI to prepare an EIS for the Project was published in the Federal Register and local newspapers on February 27, 2001. Agencies and the public had an opportunity to identify issues and concerns during a 30-day scoping period and at scoping meetings held during this period.

As a bi-state transportation project, the Project invoked both the Washington NEPA/SEPA /404 Merger and the Oregon Collaborative Environmental and Transportation Agreement to Streamline (CETAS). Both processes were intended to streamline the environmental review process. Committees that comprise federal and state agencies were established to implement these processes. For the Washington NEPA/SEPA/404 Merger process, the then Signatory Advisory Committee (SAC) included representatives from FHWA, USACE, U.S. EPA, USFWS, NOAA Fisheries, WSDOT, WDFW, and Ecology. For the Oregon CETAS process, the committee included the same federal agencies and ODOT, Oregon DEQ, ODFW, Oregon Department of Land Conservation and Development, Oregon DSL, and Oregon SHPO.

Concurrence from the SAC and CETAS agencies on the purpose and need statement and criteria used for selecting the building alternatives was requested and obtained during the alternative identification phase of the Project. Copies of the Purpose and Need statement and Criteria for Alternatives Selection were provided to the agencies. Presentations were made to both groups.

Concurrence on the range of alternatives to evaluate in the Draft EIS was also provided by the SAC and CETAS. Further coordination with these two groups occurred as part of the Draft EIS development and review. All agencies, tribes, and the public had an opportunity to review and comment on the Draft EIS. Substantive comments received on the Draft EIS will be addressed in the Final EIS.

Tribal Consultation

The FHWA initiated tribal consultation for the Draft EIS consistent with Section 106 of the NHPA and with Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments) in December 2000. Consultation letters were sent to four federally-recognized tribes including the Yakama Nation, the Warm Springs, the CTUIR, and the Nez Perce Tribe, requesting information that might be helpful in addressing project impacts on cultural sites and treaty fishing sites in the Project area. Several actions were taken by the Project team and FHWA to gain input and involve the tribes in decisions about the Project, including sending Project newsletters and coordinating through WSDOT and ODOT tribal liaisons.

The Project team worked with the WSDOT Central Region's tribal liaison to share Project information with and gather input from the Yakama Nation. Project team members met on-site with the Yakama tribal liaison in March 2002, who then met in-person with the Southwest Region tribal coordinator. Yakama tribal representatives from the Cultural Program and Fish and Wildlife Program conducted a field inspection visit in May 2002.

A representative from the BIA attended two or more of the coordination meetings with the Resource and Regulatory Committee.

Public Involvement

A variety of activities were used to involve the public in the Project during the Draft EIS, summarized in Exhibit 5-1 below.

Exhibit 5-1. Draft EIS Public Involvement Activities

Public Involvement Activity	Summary
Advisory Committee Meeting Process	Three committees helped guide the study. **Local Advisory Committee:** composed of local citizens representing business, environmental, ethnic and other civic groups or constituents. This group reviewed and discussed technical work from the perspective of community leaders with a broad understanding of regional needs. This committee provided recommendations to the Steering Committee regarding the nature of the bridge crossing needs and a link to the Management Team. **Steering Committee:** composed of elected officials or high-level managers from participating agencies and senior agency staff, including WSDOT and ODOT senior management staff, Southwest Washington Regional Transportation Commission representatives, port commissioners or senior staff, county commissioners, mayors, and county engineers. This committee reviewed information from the Local Advisory Committee, resolved issues where there was an impasse, provided liaison to their respective constituents, received recommendations, and deliberated prior to making final recommendations to the Management Team. **Resource Regulatory Committee:** composed of staff of state and federal resource and regulatory agencies with an interest and role in assessing the environmental impacts of the Project. This group met periodically to comment on and provide advice about how best to address technical and regulatory issues.

Public Involvement Activity	Summary
Public Meetings	Five public meetings were conducted to inform and involve citizens in the Project. **October 2000:** Participants reviewed background information about the Project and provided comments on issues related to the study, as well as those related to specific corridors identified for further study. **March 8, 2001:** This meeting was part of the NEPA scoping process initiated in February 2001. Participants reviewed a preliminary assessment of corridors and types of facilities identified for further study, as well as the criteria used for the initial evaluation. **October 11, 2001:** Participants reviewed and commented on location and alignment concepts and evaluation methods, received updates of the process, and completed a questionnaire identifying which alternatives should be evaluated in greater detail. **February 28, 2002:** Participants reviewed and commented on bridge design concepts for the alternatives and participated in a question and answer session with the Project team. **May 15, 2003:** Participants reviewed a preliminary evaluation of alternatives being evaluated as part of a Draft EIS and a summary of the schedule and process for the Draft EIS.
Stakeholder Interviews	Approximately 25 stakeholder interviews were conducted with a variety of community leaders and interest group representatives. Interviewees were asked to identify key issues, potential evaluation criteria, and comments about specific preliminary crossing corridors.
Project Newsletters	Regular newsletters were used to inform the public of Project status and developments throughout the process. These newsletters included information ranging from the background of the project, Draft EIS process, possible impacts associated with potential corridor crossings, evaluation and screening criteria, tolling information, and results of past public involvement activities and upcoming public involvement activities.
Community Questionnaire	A community questionnaire was developed at the outset of the Project to identify important issues and criteria for evaluating crossing corridors and alternatives. Questionnaires were included in the first Project newsletter, which was distributed as an insert in local newspapers with a circulation of approximately 9,000 people. The questionnaire also was made available on the Project web site and in a variety of community meeting places in Oregon and Washington.
Media Releases	Media notices to local newspapers and radio stations were used to inform the public about the status of the Project and invite them to attend in public and advisory committee meetings.
Community Group Presentations	Presentations were made by Project staff to the Klickitat County Board of County Commissioners, White Salmon Rotary, Columbia River Gorge Windsurfing Association, Hood River Rotary, CRGC, and Skamania County and Klickitat County Transportation Policy committees.
Additional Scoping Comments	A variety of comments were provided by the public via e-mail, mail, and telephone during the scoping phase of the Project.
Website	A web site has been developed and maintained for the Project. Documents, such as technical reports, meeting minutes, and comment summaries of the NEPA scoping meeting/open house and other public meetings were included on the web site.

Outreach During the Supplemental Draft EIS

Agency Coordination

FHWA, ODOT, and the Port are joint lead agencies for the Supplemental Draft EIS. Numerous agencies and tribes were invited by letter to participate as cooperating or participating agencies/tribes. Both cooperating and participating agencies/tribes have the opportunity to review and comment on Project milestones and activities. The Agency Coordination Plan developed for the Project defines how FHWA, ODOT, and the Port will communicate about the Project with cooperating and participating agencies/tribes during the preparation of the Supplemental Draft EIS and combined Final EIS/ROD.

Lead, cooperating, and participating agencies/tribes and their individual responsibilities are summarized below.

Lead Agencies

FHWA is acting as the lead agency for the NEPA process with the Port and ODOT serving as joint lead agencies. FHWA is leading the EIS as the bridge connects to the Oregon and Washington state highway systems and is included in the National Highway System. The Port is acting as a joint lead as they own the bridge and have received state funding through the Oregon State Legislature for this environmental review phase of the Project. The Port shares in the responsibilities to prepare the Supplemental Draft EIS and Final EIS. ODOT is also acting as a joint lead as they are providing oversight, environmental reviews, and liaison staff for the EIS review process. The responsibilities of the lead agencies are highlighted in Exhibit 5-2.

Exhibit 5-2. Lead Agencies and Responsibilities

Lead Agency	Responsibilities
FHWA	• Manage the NEPA coordination process • Prepare the Supplemental Draft EIS and the Final EIS • Prepare technical work products • Provide opportunity for public and cooperating/participating agency involvement
The Port	
ODOT	

Cooperating Agencies

Cooperating agencies are any federal or state agency that has jurisdiction by law or special expertise with respect to any environmental impact involved in the Project. Cooperating agencies consult with the lead agencies on required technical studies, conduct joint field reviews, and express their agency views on subjects within their jurisdiction or expertise. Cooperating agencies for the Project and their responsibilities are listed in Exhibit 5-3.

Exhibit 5-3. Cooperating Agencies and Responsibilities

Cooperating Agency	Responsibilities
USACE	• Clean Water Act, Section 404 Permit • Rivers and Harbors Act, Section 408 Navigation Permit
U.S. BIA	• Federal-Tribal Trust
USCG	• Rivers and Harbors Act, Section 9 Bridge Permit
WSDOT	• Technical reviews of select environmental resources • Design review of Project elements in Washington State • Coordination with ODOT, FHWA, and Washington State DAHP • SEPA analysis on WSDOT actions associated with bridge

Participating Agencies and Tribes

Participating agencies are any federal, tribal, state, regional, and local agencies that have an interest in the Project. Participating agencies for the Project and their responsibilities are listed in Exhibit 5-4

Exhibit 5-4. Participating Agencies/Tribes and Responsibilities

Participating Agency	Responsibilities
City of Hood River	• Regional and local transportation, local land use, and local permits
City of White Salmon	• Regional and local transportation, local land use, and local permits
CRGC	• CRGNSA Management Plan
Yakama Nation	• Government-to-government consultation • Section 106 NHPA
CTSI	• Government-to-government consultation • Section 106 NHPA
CTUIR	• Government-to-government consultation • Section 106 NHPA
Warm Springs	• Government-to-government consultation • Section 106 NHPA
Cowlitz Indian Tribe	• Government-to-government consultation • Section 106 NHPA
Hood River County	• Regional and local transportation and local land use
Klickitat County	• Regional and local transportation and local land use
NOAA Fisheries	• Federal ESA • Magnuson-Stevens Act • Marine Mammal Protection Act
NPS	• NHPA • Section 6(f) of the LWCF Act
Nez Perce Tribe	• Government-to-government consultation • Section 106 NHPA
Oregon DSL	• Oregon Removal/Fill Act • Easement for State-Owned Waterway
OPRD	• Federal and state recreation grant programs
Oregon SHPO	• Section 106 NHPA
Oregon State Marine Board	• Recreational waters coordination
Skamania County	• Regional and local transportation and local land use
Southwest Washington RTC	• Regional transportation
Grand Ronde	• Government-to-government consultation • Section 106 NHPA
U.S. EPA	• EIS review
USFWS	• Federal ESA • Fish and Wildlife Coordination Act • MBTA
USFS	• CRGNSA
Washington State DAHP	• Section 106 NHPA
WDFW	• Hydraulic Project Approval
Washington State Recreation and Conservation Office	• Federal and state recreation grant programs

Tribal Consultation

FHWA is conducting government-to-government tribal consultation in coordination with ODOT who has been programmatically delegated authority for Section 106 compliance and consultation. ODOT will continue consultation with the previously consulted four Columbia River treaty tribes (the Yakama Nation, the Warm Springs, the CTUIR, and the Nez Perce Tribe) as well the Cowlitz Indian Tribe, CTSI, and the Confederated Tribes of the Grand Ronde Community of Oregon. In addition, consultation on treaty fishing rights on the Columbia River and the White Salmon TFAS, East White Salmon Fish Processing Facility, Underwood In-Lieu site, and Stanley Rock TFAS has been undertaken by ODOT and FHWA with the Columbia River treaty tribes.

Consultation activities conducted to date include:

- Re-initiation of government-to-government consultation (August 23, 2019)
- Environmental methodology memoranda provided to each tribe for review and comment (August 23, 2019)
- The Project was introduced at regularly scheduled meetings with the Warm Springs, CTUIR, Nez Perce Tribe, CTSI, and Grand Ronde held during summer and fall 2019; in-person meetings were suspended in March 2020 due to the COVID-19 pandemic; virtual meetings will continue with the tribes throughout the remainder of the project with in-person meetings resuming when tribes and agencies authorize
- Presentations to the CTUIR Cultural Resources Committee (January 21, 2020) and Fish and Wildlife Commission (February 25, 2020)
- Coordination with the Yakama Nation, Warm Springs, and Nez Perce Tribe to prepare ethnographic studies to describe their respective tribes' culture and customs that pertain to this this area of the Columbia River Gorge
- Archaeological survey report, testing plan, and responses to tribal comments on the environmental methodology memoranda provided to each tribe for review and comment (June 11, 2020)
- Meeting with the maintenance manager for CRITFC at the White Salmon TFAS for a site tour and information session (July 10, 2020)
- Monthly Project updates from the Port sent to key elected tribal leaders

To further understand the background and current use of the White Salmon TFAS, East White Salmon Fish Processing Facility, Underwood In-Lieu site, and Stanley Rock TFAS, coordination with the U.S. BIA and CRITFC has also been undertaken by the Project team. The U.S. DOI owns these treaty fishing and processing sites; the BIA is the delegated administrative agency for these lands; and CRITFC is contracted to provide operational management and maintenance of all the Columbia River TFASs as well as in-lieu fishing sites.

Consultation with the tribes has provided key background information about the importance and use of tribal fishing sites and fisheries, as well as concerns about the impacts from the Project to these resources. The activity of fishing and the fisheries that live in and migrate the Columbia River have an integrated, commercial and subsistence importance to the four Columbia River treaty tribes, as well as a ceremonial and religious importance tied to the continuity of tribal culture. Salmon, in particular, have been an integral part of tribal religion, culture, and physical sustenance. Salmon are one of the traditional "First Foods" that are honored at tribal ceremonies (CRITFC 2020e). Salmon and their waters they are contribute to a sense of place; fishing for salmon is just as integral an aspect of tribal culture as consuming or selling it. The activity of fishing helps establish tribal members appreciation for the land, the water, and the fish within these waters, and the annual salmon harvest allows the transfer of these values from generation to generation (CRITFC 2020f). Ceremonial fishing occurs predominately during the spring to provide fish for specific ceremonial purposes or events. Subsistence fishing includes fishing for family or personal consumption and can also be used to barter with other federally-recognized tribes. Fisheries are managed with the intent to have some subsistence fisheries open year-round. Commercial fishing is deeply rooted in tribal cultures as well as providing economic benefits to tribal fishers. Commercial fisheries occur in the fall, winter, summer, and occasionally in mid-to-late spring with most fish that are commercially-harvested by the tribes are caught using gill nets (CRITFC 2014).

From the consultation that has occurred to date, concerns are generally focused around construction impacts to the White Salmon TFAS. These concerns include noise impacts at the site and to in-water fishers, limited road and vessel access, turbidity and under-water noise, night fishing and safety concerns regarding in-water construction materials, sediment build-up, construction debris drifting to the site, and in-water work potentially overlapping with ceremonial and subsistence fishing seasons. Long-term concerns from the Project included permanent easements on the site from the placement of a bridge pier and the overhead bridge deck, garbage being thrown off the new shared use path and drifting to the site, as well as increased visibility of the site from non-tribal members using the shared use path that could lead to unauthorized access of the site and/or decrease privacy for residents, ceremonial activities, and general use of the site. In addition, the existing bridge piers near the site are utilized to tie up boats and gill nets.

Consultation with the tribes are ongoing, including discussions regarding potential impacts to tribal fishing sites, access to the river, fishing activities from the shoreline and in the river, and fisheries. Future in-person consultation between the Project team and the tribes has been delayed indefinitely due to the current COVID-19 pandemic. Tribes have been particularly impacted by the COVID-19 pandemic, which has resulted in tribal government shut-downs and limited access for members to tribal committees. Alternative methods to solicit input from tribes and tribal fishers are being planned as direct contact will not likely be possible while the pandemic continues. These methods include virtual meetings with tribes individually and collectively, as well as engaging tribal fishers directly (non-contact) by placing signage and renderings at tribal fishing sites and requesting feedback. Ultimately, the Project team, specifically the Port, seeks to continue consultation through and beyond the NEPA process and replacement bridge construction to develop a long-term relationship with the tribes. Pertaining to consultation specific to Section 106 compliance, efforts include resumption of FHWA/ODOT meetings with tribes, tribal review and comments on Section 106 documents, tribal research on TCPs in the APE, and future meetings between the Project team and tribes to discuss any necessary mitigation measures.

Public Involvement

Public involvement and community input have been integral to the environmental review of the Project. Public involvement since the re-launch of the Project in 2018 has focused on sharing information about the build alternatives, validating the range of alternatives and the Preliminary Preferred Alternative previously identified in the Draft EIS, gathering meaningful input from stakeholders and environmental justice communities, and informing the Project design. Summaries of these outreach efforts are listed below.

Project Website

The Port has developed and maintained a Project website throughout the duration of the Supplement Draft EIS process. The website provides information on the Project background, bridge history, ways to be involved, EIS Working Group, Project contact information, and Project timeline. The web site can be found at: https://portofhoodriver.com/bridge/bridge-replacement-project/.

Stakeholder Interviews

September 18-25, 2018: Before re-launching the Project to complete the NEPA process, members of the Project team interviewed 24 local community members from Washington and Oregon in the Mid-Columbia River Gorge. Community members interviewed represented local and regional government, industry, transit, freight shippers, social services, recreation, small businesses, and emergency responders. The purpose of these interviews was to inform the public engagement process for moving the Project forward. The objectives of the interviews were to:

- Understand the range of perspectives that exist related to designing and replacing the bridge
- Identify specific issues of concern or opportunity related to stakeholder engagement and decision-making during the NEPA phase
- Learn about and accommodate concerns and expectations where possible
- Identify communities of interest and other key stakeholders the public engagement process needs to reach.

In all the interviews, there was universal agreement on the need to replace the bridge, the close connection between communities on each side of the Columbia River, and the shared regional economy. In about half of the interviews, participants expressed familiarity with elements of the Preferred Alternative (Alternative EC-2) identified in the Draft EIS and TS&L Study. Regardless of the knowledge level, there was concurrence that the Preferred Alternative should be the launch point for the next phase rather than re-opening the alternative development process. Several people said such elements such as the bridge type, location, and bicycle and pedestrian access should be validated before proceeding to ensure conditions and assumptions had not changed.

Community Meeting

December 10, 2018: A community meeting was held to publicly relaunch the Project. The event was intended for all community members interested in the Project or who may be affected by the Project. In total, 56 people attended the meeting. Staff members used display boards, an aerial map, a fact sheet (in English and Spanish), flip charts, and paper survey forms (in English and Spanish) to engage in conversation and solicit input. A short presentation provided an overview of the Project and was followed by a question and answer session. A Spanish speaker attended to translate information as needed. The meeting was advertised through various outlets, including local newspapers, social media, email distribution, and a Project website.

Themes of comments recorded by staff at the community meeting included:

- Excitement and sense of urgency to move forward
- Good support for the corridor, alternatives, and selection of Preferred Alternative
- Focusing on funding a replacement bridge right now
- Future needs - two vehicle lanes may not be enough considering freight trucks may use a new crossing more often and the potential need for emergency evacuation

Community members provided input on the Project at the December 2018 meeting.

Participants also expressed concerns with the following aspects of the Project:

- Removal of the existing bridge and loss of an historic resource
- Too much bridge lighting and loss of night sky
- Environmental impacts
- Size of structure
- Toll rates and previous uses of toll revenue

Survey

December 10, 2018 – January 31, 2019: A 15-question survey was made available online and in paper format in both English and Spanish and was advertised through various mediums. In total, 572 people completed the full questionnaire. Of the completed questionnaires, 40 percent of the respondents stated that they utilized the existing bridge daily, while 34 percent responded as using the bridge weekly. Traveling to recreational or social activities, running errands, visiting family and friends, and traveling to and from work were identified as the main reasons for crossing the existing bridge. Roughly 70 percent of respondents 'strongly agree' or 'agree' that the Preferred Alternative (Alternative EC-2) was the preferred solution for further study and design refinements.

Environmental Justice Community Outreach Events

January 10, 2019: Project team members attended a Latinos en Acción meeting to diversify outreach activities for the Project and to specifically reach Spanish-speakers in the community. Latinos en Acción is a Hood River-based community group that meets monthly at The Next Door Inc. The Project team outlined the key Project elements, including schedule and the steps required to plan for the replacement bridge. In total, 15 community members attended this meeting. Attendees' questions ranged from the safety of the replacement bridge design, pedestrian and bicycle access, tolls, and where and when to provide further feedback and questions.

Focus group members discussed the Project's design, shared use path, and issues related to bridge tolling.

September 11, 2019: Project team members partnered with The Next Door Inc. and Washington Gorge Action Programs to host a focus group to solicit feedback from community members about the Project's process, design, bicycle and pedestrian facilities, and potential toll structures. The focus group was held at the Washington Gorge Action Programs meeting room in the City of Bingen. Lower income and/or Spanish-speaking community members were recruited to participate in the focus group session. The focus group was facilitated in English and Spanish and Project team members were available to discuss the Project and answer questions from session participants with Spanish support from the staff of The Next Door Inc. Attendees' responses regarding the shared use path indicated that they would use this facility to recreate, see the river, and take photos. All those in attendance said they would use the path for work trips, especially if the toll was free. Attendees mentioned that, due to multiple trips per day across the bridge, tolling can become expensive. Some mentioned using combined trips and/or avoiding the bridge because of toll costs.

Tabling Events

January 12, 2019: Two tabling events were held in the City of White Salmon and the City of Hood River to introduce and enhance community member awareness to the Project and to drive participation in the survey. The event in the City of White Salmon was held at the Harvest Market and at the Walmart in the City of Hood River. At the events, Project team members hosted informational tables and were on hand to distribute Project fact sheets and surveys, discuss the Project with interested community members, and direct participants to the online survey to provide additional feedback. Three Project boards were displayed at the events and English and Spanish versions of the Project fact sheet and survey were available.

From the brief interactions with community members, the overall level of interest in the Project is high, and many stressed the importance of the bridge to their daily lives and livelihoods. Verbal comments generally included a confirmation that the Project is needed, concern regarding future tolling and funding, and positive response to wider travel lanes and the addition of bike and pedestrian access. Several community members indicated they were concerned that tolls and/or taxes would increase.

September 7, 2019: Two tabling events at the Bingen Huckleberry Festival and at the Hood River Farmers Market were held to solicit feedback on how community members would utilize pedestrian and bicycle facilities on the replacement bridge and how a potential toll increase would impact community members. Notification of the tabling events was made via the Port, Hood River Farmers Market, and Huckleberry Festival social media accounts. Display boards with Project information were displayed and Project team members were on-hand to discuss the Project with interested community members and to direct participants to fill out comment cards to provide additional feedback. Project information was provided in English and Spanish.


Tabling events helped inform community members about the Project.

Given the style and location of the tabling events, interaction with community members was fairly in-depth, as they were generally interested in discussing the Project and verbally voicing their input on the shared use path and design concepts. The overall level of interest in the Project is high, and many expressed a desire to see the Project move forward to design and construction. Verbal comments generally included a positive response to the Project and the addition of a shared use path, and concerns regarding the timeline of the Project, future tolling and funding. A total of 75 survey/comment forms were collected during the two events. The shared use path survey indicated that most respondents (80 percent) would use the shared use path as both a cyclist and a pedestrian. When asked "Why would you use the shared use path?" the top response was to get to recreation or social activities, following by visiting family and friends, and to run errands or get to medical appointments. General comments on the comment forms addressed the need for accessibility, wind protection for pedestrians/cyclists, limiting light pollution from the bridge, and connections to pedestrian/bicycle trails on both the Oregon and Washington sides.

EIS Working Group Meetings

November 8, 2018, February 21, 2019, May 23, 2019, September 12, 2019: The EIS Working Group is a discussion body that helps the Project team conducting the environmental review. The EIS Working Group consists of various governmental and transportation-related agencies and was established to provide a feedback loop to the Project team. These EIS Working Group meetings are hosted by the Port, open to the public, and are advertised on the Project website. Using the available "Translate" tool, the site is available in many languages, including Spanish. EIS Working Group members provide guidance and information to the Project team on key inputs to the analysis and recommendations as the Supplemental Draft EIS is developed.


Photo source: Hood River News
The EIS Working Group provides key input for the environmental review.

Supplemental Draft EIS Public Comment Period and Hearing

A 45-day public comment period will be provided upon the public release of the Supplemental Draft EIS to allow for formal comments in writing regarding the design solutions presented in the alternatives, environmental analysis, and identification of a Preferred Alternative. During the public comment period, a public hearing will be held to provide an opportunity for members of the public to provide formal comments orally or in writing. The hearing will be open to all community members and Project team members will provide display boards, aerial maps, fact sheets (English and Spanish), and other material to inform the conversation and solicit input. Project team members will give a presentation providing an overview of the Project and an opportunity for one-on-one question and answer discussions. The hearing and comment period will be advertised through various outlets, including the Project website, email distribution, social media, local newspapers, and the *Federal Register*.

6. SECTION 4(f) ANALYSIS

6.1. INTRODUCTION

Section 4(f) of the U.S. DOT Act of 1966 established a requirement for consideration of park and recreational lands, wildlife and waterfowl refuges, and historic sites during the development of transportation projects. Park and recreation facilities qualify as Section 4(f) properties when they are publicly owned, open to the public during normal hours of operation, serve recreation activities as a major purpose, and are of national, state, or local significance (e.g., are included in a local master plan). Historic properties must be of national, state, or local significance and listed or eligible for listing on the NRHP to qualify as Section 4(f) properties.

In order for a project to meet the thresholds of a Section 4(f) use of property, it must meet the definition of a "use" in 23 CFR 774.17. A use of Section 4(f) property occurs when land is permanently incorporated into a transportation facility, when there is a temporary occupancy of land that is adverse for preservation purposes, or when there is a constructive use of Section 4(f) property. Constructive uses do not involve incorporation of land of a Section 4(f) property but involve proximity (indirect) impacts that are so great in magnitude that they impair the protected activities, features, or attributes of the Section 4(f) property (23 CFR 774.15).

Section 4(f), codified in 49 U.S.C. §303 and 23 U.S.C. §138, applies to projects that receive funding from or require approval by an agency of the U.S. DOT and is implemented by the FHWA or the Federal Transit Administration (FTA) through the regulation 23 CFR 774. Section 4(f) specifies that the Secretary of Transportation may approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- There is no prudent and feasible alternative to using that land; and
- The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use

A detailed analysis demonstrating the above requirements is not required when a transportation use of a Section 4(f) property is *de minimis*. For public parks, recreation areas, or wildlife and waterfowl refuges, that means the use, including measures to minimize harm, such as any avoidance, minimization, mitigation, or enhancement measures, does not adversely affect the activities, features, or attributes that qualify the resource for protection under Section 4(f). For historic sites, a *de minimis* impact is one that results in a determination of "no adverse effect" or "no historic properties affected" under Section 106 of the NHPA.

Likewise, a detailed Section 4(f) evaluation is not required to document a determination that a project would not result in a constructive use.

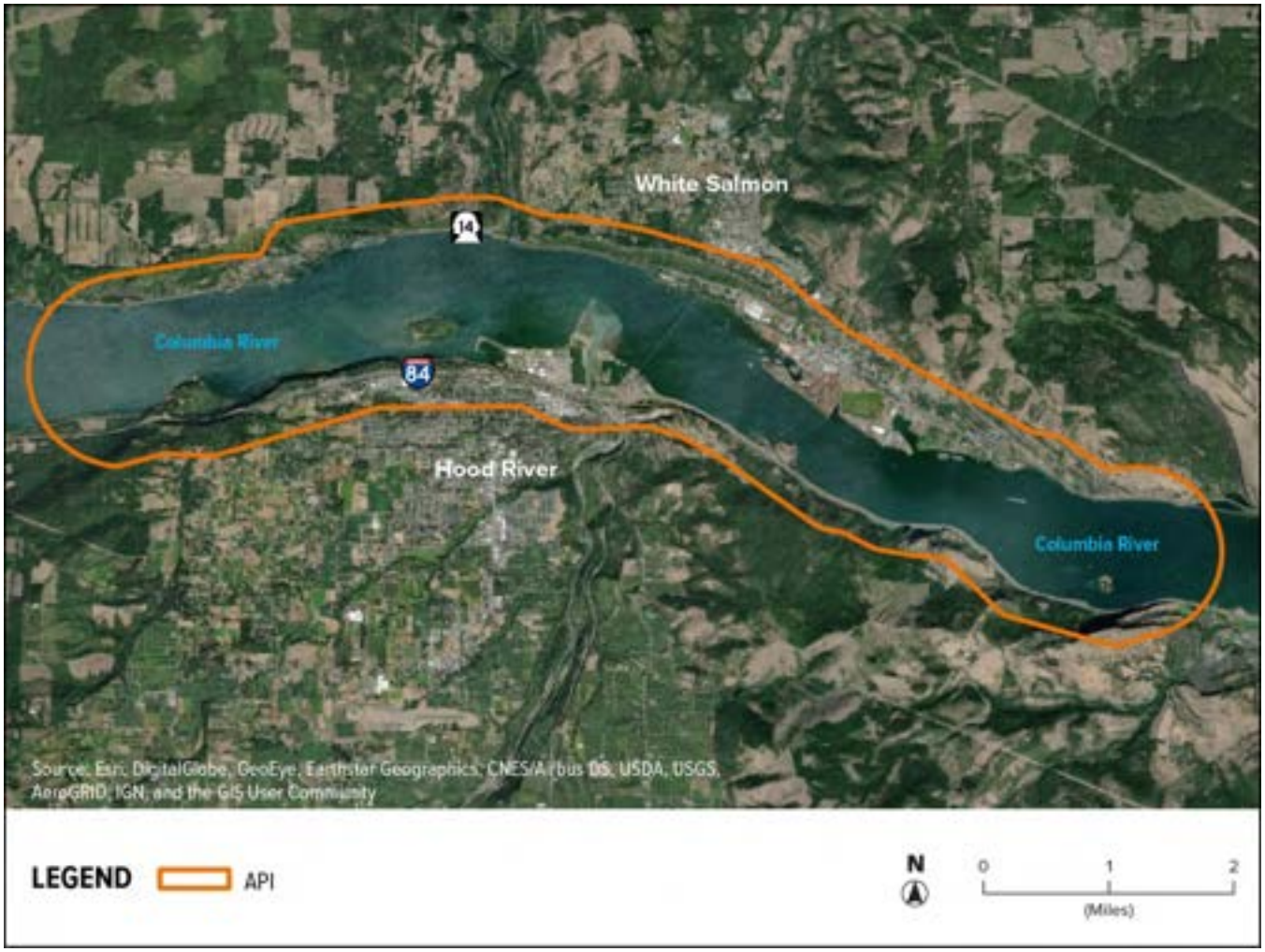
This chapter summarizes the Project's impacts on properties that are protected under Section 4(f) for which impacts have been identified. Details on other Section 4(f) properties in the Section 4(f) API can be found in the Supplemental Draft EIS, in the Historic Resources Technical Report (Appendix H) and the Park and Recreation Technical Report (Appendix K). A complete project description is provided in Chapter 1, Purpose and Need for Proposed Action, and the project alternatives are detailed in Chapter 2, Alternatives.

6.2. METHODOLOGY

AREA OF POTENTIAL IMPACT

The API for the Section 4(f) analysis is shown below in Exhibit 6-1. The Section 4(f) API encompasses an area approximately 4 miles upstream and downstream of the bridge and ¼-mile north of SR-14 on the Washington side and ¼-mile south of I-84 on the Oregon side to capture park and recreation resources associated with the Columbia River. This API encompasses the area anticipated for direct and indirect impacts to Section 4(f) resources resulting from the Project – encompassing both the Park and Recreation API and the Historic Resources APE.

Exhibit 6-1. Section 4(f) API



Regulations, Standards, and Guidelines

The federal, state, and local regulations, standards, and guidelines that apply to the Project are listed below. The primary change to the practice of evaluating Section 4(f) properties for potential impacts since the Draft EIS results from the joint regulation (23 CFR 774) issued by FHWA and the FTA (and later amended to include Federal Railroad Administration) that updated implementation of Section 4(f), including a provision for *de minimis* impacts.

- Section 4(f) of the U.S. DOT Act of 1966
- Section 106 of the NHPA of 1966
- 23 CFR 774 Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites (Section 4(f)) (Revised 2018)
- FHWA Technical Advisory T 6640.8A: Guidance for Preparing and Processing Environmental and Section 4(f) Documents (1987)
- FHWA: Section 4(f) Policy Paper (2012)

Sources of Existing Data

Since publication of the Draft EIS there have been some land use changes in the API, including the planning and development of additional publicly owned park and recreation facilities such as the City of Hood River's Waterfront Park (Phase I completed in 2008) and conceptual plans developed in 2018 for "Bridge Park" on Klickitat County-owned land in White Salmon. The list of park and recreation facilities protected under Section 4(f) relies on existing data sources and data collected for the Park and Recreation Technical Report.

The list of historic sites protected under Section 4(f) rely on existing data sources and data collected for the Historic Resources Technical Report.

Data Collection or Development

In addition to the existing data available (described above), data collection and development occurred in collaboration with project partners, agencies, organizations, and project team engineers. See the Historic Resources Technical Report and the Park and Recreation Technical Report for additional details on data collection and development.

Impact Analysis Techniques

Construction Impacts

The analysis of construction impacts on publicly owned park and recreation facilities in the Parks and Recreation Technical Report and on historic resources in the Historic Resources Technical Report were used to determine whether temporary occupancy of any Section 4(f) properties constitutes a use under Section 4(f). Documentation of Section 4(f) temporary occupancy was prepared in accordance with ODOT and FHWA guidance.

Direct Impacts

The analysis of direct impacts on publicly owned park and recreation facilities in the Parks and Recreation Technical Report and on historic resources in the Historic Resources Technical Report were used to determine whether a use would occur under Section 4(f). For those resources with relatively minor impacts, the Section 4(f) *de minimis* determinations were prepared based on ODOT's Section 4(f) *de minimis* impact determination template. The public will have the opportunity to comment on the proposed *de minimis* impact determinations as part of the public hearing and comment period for the Project's Supplemental Draft EIS. The project will obtain written concurrence by the official(s) with jurisdictions for the *de minimis* impact and temporary occupancy determinations. Section 4(f) *de minimis* impact determinations will require the signature of the FHWA—Oregon Division administrator.

Indirect Impacts

The analysis of indirect impacts (proximity impacts) on publicly owned park and recreation facilities in the Parks and Recreation Technical Report and on historic resources in the Historic Resources Technical Report was used to determine whether a constructive use would occur under Section 4(f).

Agency Coordination

Concurrence on Section 4(f) findings will be obtained from the official with jurisdiction over those resources that would experience a use.

6.3. Use of Section 4(f) Properties

Historic Sites

As demonstrated in the Historic Resources Technical Report (Appendix H), there are eight historic sites that qualify for protection under Section 4(f). The following section summarizes the use analysis for historic resources that qualify as Section 4(f) properties.

Hood River – White Salmon Bridge

Description of Section 4(f) Resource

The existing Hood River Bridge is a 4,418-foot-long steel truss toll bridge completed in 1924 and substantially modified in 1938. The bridge's center span is a 262-foot riveted steel Pennsylvania-Petit through-truss vertical lift main span, which is a historic modification of the bridge's original center fixed-span to address higher water elevations in the Bonneville Pool (Burrow et al. 2013:94) resulting from dam construction. The steel grate bridge deck provides two narrow travel lanes but no sidewalks or bikeways. The tollbooth, completed in 1965, is located at the bridge's Oregon entrance.

The Hood River Bridge is eligible for the NRHP under Criteria A and C. Under Criterion A, the bridge has statewide significance in the area of transportation as the second oldest Columbia River vehicle crossing between Oregon and Washington and for its association with private bridge development and operation during the early twentieth century. The bridge also has local significance under Criterion C in the area of engineering for the design of its central span, which embodies the distinctive

characteristics of the vertical-lift Pennsylvania-Petit steel through-truss. The period of significance for Criterion A begins in 1924, when the bridge opened, and ends in 1950, when the Oregon Washington Bridge Company, a private entity, transferred ownership and operations of the bridge to the Port, a public entity. The period of significance under Criterion C is 1938, when the bridge was substantially modified by incorporation of the distinctive vertical-lift span.

The Hood River Bridge, looking south from White Salmon, WA

The bridge retains all aspects of historic integrity: location, design, setting, materials, workmanship, feeling, and association. Although the original bridge was substantially modified in 1938, the purpose of the design modifications was to accommodate higher river levels caused by the pool behind the new Bonneville Dam and the proliferation of larger vessels. The modifications do not diminish the integrity of design but contribute to its significance under Criterion A by conveying the evolution of the bridge in response to historic events. The distinctive vertical-lift span remains in place and reflects the 1938 design, thereby supporting integrity of design under Criterion C.

In accordance with 23 CFR 774.11(e), to qualify for protection as a Section 4(f) property, historic sites must: (1) be of national, state, or local significance and (2) must be on or eligible for listing on the NRHP. The Washington DAHP and the Oregon SHPO have concurred that the existing Hood River Bridge is eligible for listing on the NRHP in the final Section 106 Determination of Eligibility (Appendix H, Historic Resources Technical Report) requiring the bridge be protected as a Section 4(f) property. Historic bridges are eligible for a programmatic Section 4(f) evaluation under 23 CFR 774.11(e); a programmatic determination is being prepared and will be finalized and approved by FHWA prior to issuing the Final EIS.

Section 4(f) Finding and Mitigation

The build alternatives, Alternatives EC-2 and EC-3, would result in the deconstruction and removal of the existing Hood River Bridge after construction of the replacement bridge is complete and all vehicular traffic is rerouted off the existing bridge. Section 4(f) applies to historic transportation facilities when adversely affected by transportation projects. If an action will impair the historic integrity of the bridge either by rehabilitation or demolition, it is considered a use of the historic bridge under Section 4(f) per 23 CFR 774. Consequently, the Project constitutes a Section 4(f) use of the Hood River Bridge under 23 CFR 774. A programmatic determination will be prepared and will be finalized and approved by FHWA prior to issuing the Final EIS.

A mitigation plan will be prepared to address the Project's Section 4(f) use of the Hood River Bridge. Potential mitigation measures will be developed in consultation with the FHWA, ODOT, the Port, and the Project's consulting parties. In addition, the public will have an opportunity to review and comment on mitigation measures during the public review period of the Supplemental Draft EIS. Upon consideration of input, FHWA, ODOT, and the Port will develop a mitigation plan as part of the Project's Programmatic Agreement, which will be published in the combined Final EIS and ROD.

Columbia River Highway National Historic Landmark District

Description of Section 4(f) Resource

The Columbia River Highway's Hood River Loops, a contributing feature of the Columbia River Highway NHL District, lie to the south and east of the Project along the basalt cliffs of the Columbia River Gorge. In 2000, the Secretary of the Interior designated the Columbia River Highway, including the Hood River Loops, as an NHL. Construction of the Columbia River Highway occurred between 1913 and 1922 and the route is notable for the views it provides of waterfalls and streams, fruit orchards, and the Columbia River and for its design features that include multiple bridges, masonry guard walls, and wood guard fences. The Columbia River Highway is significant under NHL Criterion 1 for its exemplary highway design in Twentieth Century America. It is also significant under NHL Criterion 4 for the contributions to the fields of civil engineering and landscape architecture made by its designer, Samuel C. Lancaster, and for being the first scenic highway in the U.S. Today, the remaining pieces of highway in the NHL district, including the Hood River Loops, retain much of their original character. Historically, the Hood River Loops had views of the Hood River Bridge, but these views have been altered or have diminished gradually over the years as vegetation has

The Columbia River Highway's Hood River Loops, looking east

grown up along the roadside and as development of other infrastructure and industrial uses have changed the view toward the bridge and its surroundings.

Section 4(f) Finding and Mitigation

The Hood River Loops section of the Columbia River Highway NHL District is not adjacent to the Project improvements and would not be either temporarily occupied or permanently incorporated into the new transportation facility (Project). The Project would not, therefore, result in a use or temporary occupancy of the Hood River Loops under Section 4(f).

A constructive use under Section 4(f) occurs when the proximity impacts of a project (indirect impacts) result in substantial impairment to the property's activities, features, or attributes that qualify the property for protection under Section 4(f). Alternatives EC-2 and EC-3 would result in temporary and permanent, proximity impacts to the Hood River Loops. Replacement of the Hood River Bridge would permanently alter the view of the bridge from the Hood River Loops. Temporary changes would consist of the visual intrusion and construction-related noise and atmospheric impacts from equipment and temporary structures. Short-term noise levels for construction activities are expected to range from approximately 70 dBA to 100 dBA and possible increased traffic. As demonstrated by the following responses to the criteria in 23 CFR 774.15(f) below, these temporary and permanent impacts do not rise to the level of a Section 4(f) constructive use:

1. *Compliance with the requirements of 36 CFR 800.5 for proximity impacts of the proposed action, on a site listed on or eligible for the National Register, results in an agreement of "no historic properties affected" or "no adverse effect;"*

Finding: As documented in the Historic Resources Technical Report, the Section 106 finding for the Project for the Hood River Loops is "no historic properties affected."

2. *For projected noise levels:*

    i. *The impact of projected traffic noise levels of the proposed highway project on a noise-sensitive activity do not exceed the FHWA noise abatement criteria as contained in Table 1 in part 772 of this chapter; or*

    ii. *The projected operational noise levels of the proposed transit or railroad project do not exceed the noise impact criteria for a Section 4(f) activity in the FTA guidelines for transit noise and vibration impact assessment or the moderate impact criteria in the FRA guidelines for high-speed transportation noise and vibration impact assessment;*

Finding: Table 1 in part 772 sets NAC for different activity categories. The Hood River Loops would be considered activity category E (developed lands that are not sensitive to highway traffic noise) with a maximum noise level of 72 dBA. The Project's Noise Technical Report modeled traffic noise in the No Action and build alternatives and found that noise levels would not exceed 65 dBA at any receiver including receivers closer to the Project than the Hood River Loops. Therefore, the Hood River Loops would be expected to experience noise levels less than for the maximum experienced by receiver locations. The Project is not a transit or railroad project.

3. *The projected noise levels exceed the relevant threshold in paragraph (f)(2) of this section because of high existing noise, but the increase in the projected noise levels if the proposed project is constructed, when compared with the projected noise levels if the project is not built, is barely perceptible (3 dBA or less);*

Finding: As discussed above, the Project's noise impact on the Hood River Loops would not exceed relevant thresholds in paragraph (f)(2).

4. *There are proximity impacts to a Section 4(f) property, but a governmental agency's right-of-way acquisition or adoption of project location, or the Administration's approval of a final environmental document, established the location for the proposed transportation project before the designation, establishment, or change in the significance of the property. However, if it is reasonably foreseeable that a property would qualify as eligible for the National Register prior to the start of construction, then the property should be treated as a historic site for the purposes of this section; or*

5. *Overall (combined) proximity impacts caused by a proposed project do not substantially impair the activities, features, or attributes that qualify a property for protection under Section 4(f);*

Finding: The Hood River Loops were designated as a historically significant resource prior to the initiation of the Project. The Section 106 Finding of Effect discusses both temporary and permanent proximity impacts to the Hood River Loops resulting from the Project consisting of visual intrusion and construction related noise and replacement of the Hood

River Bridge and concludes with a finding of "no historic properties adversely affected" for the Hood River Loops for the following reasons. First, the construction of the Hood River Loops was not necessarily historically associated with construction of the Hood River Bridge. Second, the roadway connecting the Hood River Loops with the bridge has been significantly altered due to modern road realignments, thus reducing their physical relationship to one another. Third, views from the Hood River Loops to the bridge are intermittent due to the weaving layout of the roadway and the deciduous and coniferous vegetation located on the river-side of the roadway. Fourth, the historic qualities of the setting viewed from the Hood River Loops has been altered by increased industrial activities since it was constructed. Fifth, the Project would not have any physical impacts upon the spatial organization, circulation, topography, vegetation nor would it adversely affect the "control points" or "beauty spots" that relate to the waterfalls, rock formations, alcoves, sided canyons or scenic vistas identified as significant components of the Hood River Loops in the Columbia River Highway NHL District nomination. Lastly, the alignment of the proposed replacement bridge would be similar to the alignment of the existing bridge and would not obscure, fragment, or significantly contrast with the existing visual environment visible from the highway. Therefore, the overall proximity impacts of the Project would not substantially impair the activities, features, or attributes that qualify the Hood River Loops for protection under Section 4(f).

6. *Proximity impacts will be mitigated to a condition equivalent to, or better than, that which would occur if the project were not built, as determined after consultation with the official(s) with jurisdiction;*

Finding: As discussed above, the proximity impacts would not substantially impair the activities, features, or attributes that qualify the Hood River Loops for protection under Section 4(f). Construction noise and visual impacts would cease after construction is complete; the existing bridge was not historically associated with construction of the Hood River Loops, therefore no mitigation for proximity impacts is not required.

7. *Change in accessibility will not substantially diminish the utilization of the Section 4(f) property; or*

Finding: Visitors to the Hood River Loops may experience delays due to construction activities, but access to the Hood River Loops would be maintained during and after construction.

8. *Vibration levels from project construction activities are mitigated, through advance planning and monitoring of the activities, to levels that do not cause a substantial impairment of protected activities, features, or attributes of the Section 4(f) property.*

Finding: The Hood River Loops are located at a distance from the Project beyond where vibration impacts from construction would be anticipated; construction activities would not cause a substantial impairment of protected activities, features, or attributes of the Hood River Loops.

FHWA in concurrence with ODOT has determined that there would be temporary noise and atmospheric effects during construction and alterations to the view from the Hood River Loops of the existing bridge. Because the two agencies have agreed that the Project would result in no historic properties adversely affected for the Hood River Loops, no mitigation for permanent impacts is proposed or required. During construction, noise and atmospheric effects would be minimized through the implementation of construction BMPs as discussed in Section 3.20, Noise and Vibration.

For the above reasons, the Project does not constitute a use, temporary occupancy, or constructive use of the Hood River Loops under Section 4(f).

Spokane, Portland, and Seattle Railway

Description of Section 4(f) Resource

The 500-foot long segment of the SP&S Railway (now known as the BNSF Railway) that would be located in proximity to and potentially be impacted by the Project was constructed between 1906 and 1907. The railway provided service from Vancouver to Pasco, Washington, and eventually offered freight and passenger service to Spokane and Portland. The rail line segment consists of a section of rails, sleepers, a concrete undercrossing, and sloped rock ballast and is part of a larger linear resource that contributes to the Railway's overall historical significance in the areas of Transportation and Commerce. It also retains integrity of setting, association, location, and feeling, and is therefore eligible for the NRHP under Criterion A. The SP&S contributed to the industrial and commercial growth of communities along the Columbia River Gorge in the early twentieth century and was a critical transportation route during WWII when it

View of the Spokane, Portland, and Seattle (SP&S) Railway (now known as the BNSF Railway)

carried war materials from aluminum plants and chemical factories to manufacturing centers in Vancouver, Portland, and Seattle. BNSF Railway owns and maintains the historic SP&S rail segment in question that passes under the existing Hood River Bridge. The SP&S Railway qualifies as a Section 4(f) property because it is an NRHP-eligible historic site as documented in the Project's Historic Resources Technical Report (Appendix H).

Section 4(f) Finding and Mitigation as documented in the Historic Resources Technical Report, Project Alternatives E-2 and E-3 (build alternatives) would involve several changes to the setting of the SP&S Railway, but these changes would have no adverse effects upon the characteristics that make the property eligible for the NRHP or that qualify the property for protection under Section 4(f). The build alternatives (Alternative EC-2 and Alternative EC-3) would result in temporary and permanent potential impacts to the general setting of the SP&S Railway. Permanent impacts include: replacing the Hood River Bridge that would alter the view of the bridge from the railway; placement of a new bridge soffit over the tracks; location of the new bridge piers at least 25 feet from the track centerline with extra distance for curvature; and a change in the crossing location of the bridge either east or west of the existing bridge depending on the alternative.

During construction, the Project would temporarily occupy the BNSF Railway right-of-way in the form of a temporary construction easement across the tracks. The easement would be used as a designated crossing for work vehicles, workers, equipment, and materials and the Project would include the use of overhead cranes and drilled shaft equipment within the easement, and placement of formwork over the tracks The Project would also place an 8-foot high fence across the BNSF Railway right-of-way on the new bridge where pedestrians have access. The Port would coordinate with BNSF Railway for demolition activities to minimize service delays.

The Section 4(f) legislation states that if the five conditions in 23 CFR 774.13(d), commonly known as the "temporary occupation exception criteria," are met, then the temporary occupancy is not adverse in terms of the Section 4(f) statute's preservationist purpose and therefore it does not constitute a "use" as defined under Section 4(f). As required by 23 CFR 774(5)(b), ODOT will consult with the Official with Jurisdiction for the SP&S Railway (DAHP) during the NEPA 45-day comment period for the Supplemental Draft EIS.

Because the Project would not result in a use or temporary occupancy of the SP&S Railway under Section 4(f), no mitigation is proposed or required. During construction, noise and atmospheric effects would be minimized through the implementation of construction BMPs as discussed Section 3.20, Noise and Vibration.

Other Historic Sites

Description of Section 4(f) Resources

The Historic Resources Technical Report also identified six residential structures in the Project's APE that are eligible for listing on the NRHP (five residential structures in White Salmon, Washington, and one residential structure in Hood River, Oregon). The residential structures represent a variety of time periods (1918-74) and architectural styles including craftsman, contemporary, ranch, Cottage-Revival, and a farmhouse. Many of the residential structures have views of the Hood River Bridge. In addition, the OR&N Columbia River main line (now owned by Union Pacific Railroad) in Hood River, Oregon, is eligible for listing on the NRHP. The OR&N railroad is located east of the Hood River Bridge crossing and is significant for its association with the broad pattern of events that shaped the Columbia River Gorge region and the Pacific Northwest.

View of the OR&N Company's Columbia River main line

Following is a brief description of the railroad and each of the residences and their defining historic characteristics:

- OR&N's Columbia River main line: The approximately ¼-mile long rail line segment within the Project APE was originally constructed in the 1880s but was significantly modified in the early twentieth century to its current alignment. The segment is a part of a larger linear resource and contributes to the OR&N railroad's overall historical significance.
- 267 SE Oak Street, White Salmon: This 1920s-era single-family residence is located near the bluff in White Salmon but is separated from the bluff by two newer houses and does not have views of the Columbia River or the Gorge. The home is eligible for the NRHP under Criterion C for its 1920s-era English Cottage architecture and is one of the few, mostly unaltered examples of early residential architecture in White Salmon.

- 301 SE Oak Street, White Salmon: Constructed in 1918, this single-family residence situated near the bluff has sweeping views of the Columbia River, Gorge, and Mount Hood. The home was built in the English Cottage architectural style and is eligible for the NRHP under Criterion A, as it retains much of its original integrity, and for community development and planning for its association with early White Salmon development along the bluff.
- 345 West Jewett Boulevard, White Salmon: This Northwest-style home was constructed in 1973 and incorporates many elements of regional, Modernist architecture including use of regional materials, vertical wood board siding, a distinctive roof opening and large windows that provide southern views. The building is eligible for the NRHP under Criterion C for embodying Northwest architecture and retains its original integrity.
- 435 West Jewett Boulevard, White Salmon: Built in 1965, this Ranch-style residence is situated along the bluff with expansive views of the Gorge and Columbia River, Mount Hood, and the Hood River Bridge. The house features a high-pitched hipped and gable roof with overhangs, horizontal wood board and brick siding, and large windows. The building is eligible for the NRHP under Criterion C for embodying Ranch-style architecture and it largely retains its midcentury integrity.
- 447 West Jewett Boulevard, White Salmon: Designed in the Colonial Revival architectural style, this 1940 home is notable for its side-gable roof, symmetrical fenestration, and brick detailing. The house has one, one-and-a-half, and two-story sections that accommodate the natural slope. The enclosed, outdoor patio has expansive views of the Gorge, Hood River Bridge, and Mount Hood. The house is eligible under Criterion C for its Word War II-era Colonial Revival architecture and largely retains its historical integrity.
- 2495 Old Columbia River Drive, Hood River: Constructed in 1930 with distant views of the Gorge, this property appears to contain character-defining features of a small, early twentieth-century ranch/farmstead. The property is eligible under NRHP Criterion C as one of the few small ranch/farmsteads from the early twentieth century east of Hood River.

More information on each of these structures is included on the Section 106 Finding of Effect forms (Appendix H, Historic Resources Technical Report).

Section 4(f) Finding and Mitigation

The build alternatives would be physically separated from the OR&N railroad and the NRHP-eligible residences and the historic resources would not be either temporarily or permanently incorporated into the Project. Both the OR&N railroad and NRHP-eligible residential structures would experience some degree of permanent and temporary proximity effects from the project, but these effects would not rise to the level of a constructive use under Section 4(f) as demonstrated by the following responses to criteria in 23 CFR 774.15(f) below:

1. *Compliance with the requirements of 36 CFR 800.5 for proximity impacts of the proposed action, on a site listed on or eligible for the National Register, results in an agreement of "no historic properties affected" or "no adverse effect;"*

   Finding: As documented in the Historic Resources Technical Report, the Section 106 finding for the Project is "no effect" for the OR&N railroad and 267 SE Oak Street and "no adverse effect" for the other historic residences.

2. *For projected noise levels:*

   i. *The impact of projected traffic noise levels of the proposed highway project on a noise-sensitive activity do not exceed the FHWA noise abatement criteria as contained in Table 1 in part 772 of this chapter; or*

   ii. *The projected operational noise levels of the proposed transit or railroad project do not exceed the noise impact criteria for a Section 4(f) activity in the FTA guidelines for transit noise and vibration impact assessment or the moderate impact criteria in the FRA guidelines for high-speed transportation noise and vibration impact assessment;*

   Finding: Table 1 in part 772 sets NAC for different activity categories. Rail lines are not an activity identified in Table 1; however, rail lines are generally not considered a noise-sensitive activity. The eligible residences would be considered activity category B (residential) with a maximum noise level of 67 dBA. The Project's noise specific technical report modeled traffic noise in the No Action and build alternatives (Alternative EC-2 and Alternative EC-3) and found that noise levels would not exceed 65 dBA at any receiver including receivers closer to the Project than the eligible residences. Therefore, the residences would be expected to experience noise levels less than for the maximum experienced by receiver locations. The Project is not a transit or railroad project.

3. *The projected noise levels exceed the relevant threshold in paragraph (f)(2) of this section because of high existing noise, but the increase in the projected noise levels if the proposed project is constructed, when compared with the projected noise levels if the project is not built, is barely perceptible (3 dBA or less);*

Finding: Rail lines are not an activity identified in Table 1 and are generally not considered a noise-sensitive activity. As discussed above, the Project's noise impact on eligible residences would not exceed relevant thresholds in paragraph (f)(2).

4. *There are proximity impacts to a Section 4(f) property, but a governmental agency's right-of-way acquisition or adoption of project location, or the Administration's approval of a final environmental document, established the location for the proposed transportation project before the designation, establishment, or change in the significance of the property. However, if it is reasonably foreseeable that a property would qualify as eligible for the National Register prior to the start of construction, then the property should be treated as a historic site for the purposes of this section; or*

5. *Overall (combined) proximity impacts caused by a proposed project do not substantially impair the activities, features, or attributes that qualify a property for protection under Section 4(f);*

Finding: The Section 106 Finding of Effect for the OR&N railroad discusses both temporary and permanent proximity impacts to the railroad resulting from the Project consisting of visual impacts and construction related noise and concludes with a finding of "no effect" for the following reasons. First, the construction of the OR&N railroad was not historically associated with construction of the Hood River Bridge as the existing bridge was erected for vehicular traffic and not railroad traffic. Second, the physical characteristics of the OR&N railroad would not be altered by the proposed project. Third, the historic qualities of the setting viewed from the OR&N railroad have been altered since its initial construction by increased industrial and commercial activities as well as transportation infrastructure since it was constructed, and the proposed project is not disproportionately out of scale when compared to this pattern of historical change. Lastly, the alignments of the proposed Project would be similar to the alignment of the existing bridge and would not obscure, fragment, or significantly contrast with the existing visual environment as observed from the OR&N railroad. Therefore, the overall proximity impacts would not substantially impair the activities, features, or attributes that qualify the railroad for protection under Section 4(f).

The residences were designated as a historically significant resource prior to the initiation of the Project. The Section 106 Finding of Effect discusses both temporary and permanent proximity impacts to the eligible residences resulting from the Project consisting of visual intrusion and construction related noise and replacement of the Hood River Bridge and concludes with a finding of "no effect" for 267 SE Oak Street and "no adverse effect" for the other historic residences for the following reasons. First, the construction of these residences was not necessarily historically associated with construction of the Hood River Bridge. Second, for many of the residences, views to the bridge are partially obstructed by other development or vegetation. Third, the historic qualities of the setting viewed from the residences has been altered by increased industrial activities and residential development since they were constructed. Lastly, the alignments of the proposed replacement bridge would be similar to the alignment of the existing bridge and would not obscure, fragment, or significantly contrast with the existing visual environment as observed from those residences with views. The Project features, construction-related activities, and facility operation, therefore, would have no effect or no adverse effect upon the characteristics that make these residences eligible for the NRHP. Therefore, the overall proximity impacts would not substantially impair the activities, features, or attributes that qualify the residences for protection under Section 4(f).

6. *Proximity impacts will be mitigated to a condition equivalent to, or better than, that which would occur if the project were not built, as determined after consultation with the official(s) with jurisdiction;*

Finding: As discussed, the proximity impacts would not substantially impair the activities, features, or attributes that qualify the eligible railroad or residences for protection under Section 4(f). Construction noise and visual impacts would cease after construction is complete and the existing bridge was not historically associated with construction of the railroad or residences, therefore mitigation for proximity impacts is not required. During construction, noise and atmospheric effects would be minimized through the implementation of construction BMPs as discussed in Section 3.20, Noise and Vibration.

7. *Change in accessibility will not substantially diminish the utilization of the Section 4(f) property; or*
8. *Vibration levels from project construction activities are mitigated, through advance planning and monitoring of the activities, to levels that do not cause a substantial impairment of protected activities, features, or attributes of the Section 4(f) property.*

Finding: The project would not affect accessibility of the OR&N railroad as no construction would occur in close proximity to the railroad right-of-way and no easements would be required from Union Pacific. Railroad activities are not sensitive to vibrations and as such would not be impacted by vibration levels from Project construction activities. Residents of the eligible residential structures may experience delays due to construction activities, but access to the residences would be maintained during and after construction. The residences are located at a distance from the Project beyond where vibration impacts from construction would be anticipated; construction activities would not cause a substantial impairment of protected activities, features, or attributes of the residences.

For the above reasons, the Project does not constitute a use, temporary occupancy, or constructive use of the NRHP-eligible residences or the OR&N railroad under Section 4(f).

Park and Recreation Facilities

As demonstrated in the Park and Recreation Technical Report, there are three park and recreation properties that qualify for protection under Section 4(f) and which are anticipated to experience impacts as a result of the project.

Bridge Park (Proposed)

Description of Section 4(f) Resource

Bridge Park, also referred to as "Riverfront Park" or "Waterfront Park," is a proposed park that would be located on a 12-acre site directly under the existing Hood River Bridge on the Washington side of the Columbia River. The property is currently owned by Klickitat County. The City of White Salmon plans to purchase the property from the County for development as a park. Acquisition and development of this park is identified as a potential capital improvement project in the Parks, Open Space, and Recreation element of the City of White Salmon's Comprehensive Plan (2016).

Looking south toward the area proposed for Bridge Park.

The conceptual design shows that access to the park would require crossing the BNSF Railway tracks. The concept plans show a gateway entrance at the Mount Adams Chamber of Commerce parking area with an information kiosk and bathroom. A pedestrian and bicycle bridge over the tracks would connect the gateway area to the main park site adjacent to the Columbia River. The concept for the park site includes viewpoints, picnic areas, children's nature play areas, beach access, a stand-up paddle boarding ramp, and a natural area.

Although it is a planned facility, Bridge Park qualifies as a Section 4(f) property because the property is publicly owned, and the site is formally designated for park and recreation purposes in the Parks, Open Space, and Recreation element of the City of White Salmon's Comprehensive Plan. This designation in the City's Comprehensive Plan also demonstrates Bridge Park's significance as a park and recreation facility and that it is more than a "mere expression of interest or desire."

Section 4(f) Finding and Mitigation

The build alternatives would require the construction and permanent placement of one land-based pier within Bridge Park. The pier would occupy a comparatively small area in the 12-acre park (less than one percent of the total land area). In Alternative EC-2, the pier would be placed in an area identified as beach access in the park concept plan; under Alternative EC-3 the pier would be located in an area conceptually identified for a trail and picnic area. The Port would obtain a permanent aerial easement for the maintenance of the bridge footing and to provide maintenance access to the underside of the bridge, resulting in a Section 4(f) use of this land as defined in 23 CFR 774.17. The easement would be approximately 0.85 acres under Alternative EC-2 and approximately 0.93 acres under Alternative EC-3. However, aside from the area for the bridge footings, the easement area would be available for park uses.

The Bridge Park concept plan depicts the existing bridge alignment centrally located within the park and does not account for a new bridge alignment over the park. However, the 2018 conceptual plan document notes that the preferred bridge alignment would put it parallel and immediately to the west of the existing bridge (as proposed under Alternative EC-2). As discussed below, a mitigation measure proposed in the Supplement Draft EIS is to coordinate with the City of White Salmon during the Project's design phase or when the design of Bridge Park advances (if prior to construction of the replacement bridge) to incorporate the replacement bridge in the conceptual plan for the park.

The park concept plan may need to be adjusted to account for the final selected bridge alignment. The area shown in the concept plan for the existing bridge overpass and bridge abutment could become available for park uses. Because of the angle of the bridge proposed under the built alternatives, a longer segment of the bridge would cross over the park in Alternative EC-3. Although a slightly larger area of the park would be shaded by the replacement bridge, physical improvements on park land would be limited to the land-based pier (approximately 560 square feet). In addition, the existing bridge footings (approximately 360 square feet) would be removed.

Construction of the replacement bridge would also result in a temporary impact of the land proposed for Bridge Park. In order to construct the bridge over the park and to place the land-based pier within the park, the Port will require a temporary easement on the proposed park parcel. The temporary easement would be approximately 2.64 acres under Alternative EC-2 and approximately 1.46 acres under Alternative EC-3. Within the temporary easement, mature vegetation would be cleared within a smaller area. Under either alternative, restoration of the disturbed area would be coordinated with the City of White Salmon so that it is consistent with the stage of park development at that time.

Mitigation

As described above, both build alternatives would result in a Section 4(f) *de minimis* use of the Bridge Park property as defined in 23 CFR 774.17. The Project would largely avoid impacts to the activities, features, or attributes of Bridge Park either on a temporary or permanent basis. For a park, recreation area, or wildlife refuge, a *de minimis* impact is one that, after taking into account any measures to minimize harm, results in a determination that the project would not adversely affect the activities, features, or attributes qualifying a park, recreation area, or refuge for protection under Section 4(f). Avoidance, minimization, and mitigation measures for the identified impacts to Bridge Park include adjusting the park concept design, removing the existing bridge abutment, and replanting mature vegetation (some of which would be removed for park improvements in the absence of the Project). The transportation use of the Bridge Park property together with the proposed impact avoidance, minimization, and mitigation measures incorporated into the Project, would not adversely affect the activities, features, or attributes that qualify Bridge Park for protection under Section 4(f). The public will be afforded opportunities to review and comment on the effects of the Project on Bridge Park through the NEPA process.

As required by 23 CFR 774(5)(b), ODOT will consult with the Officials with Jurisdiction for Bridge Park (Klickitat County and the City of White Salmon) during the 45-day comment period for the Supplemental Draft EIS.

Hood River Marina Park and Basin

Description of Section 4(f) Resource

Hood River Marina Park and Basin is located 0.1 mile west of the Hood River Bridge on the Oregon side of the Columbia River, and is the closest developed park and recreation facility to the existing bridge. Hood River Marina Park and Basin qualifies as a Section 4(f) property because the property is publicly owned, is open to the public, its major purpose is park and recreation activities, and it is significant as a park and recreation facility as demonstrated by its inclusion in the Hood River Valley Parks and Recreation District Master Plan (2012), the Port of Hood River Waterfront Report (2018), and the Port's list of waterfront recreation sites.

Boat Basin at Marina Park

The 27-acre park is owned by the Port and includes a marina, beach, yacht club, boat launch, cruise ship dock, history museum, beach, and open lawn area, and the Port's administration office and maintenance shop, which functionally support recreational activities at the Marina Park and Basin. Although located within the Marina Park and Basin boundary, the administration office and maintenance shop are not protected under Section 4(f) as they do not meet the criteria (i.e., they are not open to the public and their major purpose is not park and recreation activities).

Section 4(f) Finding and Mitigation

Both build alternatives could result in a short, temporary closure of some of the parking area for the boat launch during construction. The Project would minimize the amount of land from the Marina Park and Basin that is required for temporary occupation and would restore temporarily occupied land within the construction easement to provide the same functionality as existed prior to construction. There would be no change in ownership for the temporarily occupied land, and the occupation would be for a duration that is less than the time needed for the construction of the project, which is estimated at 6 years. Therefore, the temporary construction impacts do not rise to the level of a Section 4(f) use.

Both build alternatives would require permanent acquisition of land from the Marina Park and Basin to accommodate the southern terminus of the replacement bridge. Under Preferred Alternative EC-2, approximately 0.6 acre would be acquired, E. Port Marina Drive would be realigned, and 3 parking spaces for the boat launch would be removed. Under Alternative EC-3, the acquisition would consist of 0.2 acre and E. Port Marina Drive would be realigned; however, there would be no change in parking.

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate impacts to Hood River Marina Park and Bridge:

Construction Impacts

- Advanced notice to park and recreation users about sidewalk, trail, and/or park closures and temporary access changes during construction would be provided.
- Contractors would be required to minimize dust and air pollutant emissions. Potential control measures are included throughout the WSDOT standard specifications and ODOT standard specifications Section 290. These control measures include vehicle and equipment idling limitations and minimize vehicle track-out and fugitive dust. These measures would be documented in the erosion and sediment control plan that the contractor is required to submit prior to the preconstruction conference. To reduce the impact of construction delays on traffic flow and resultant emissions, road or lane closures would be restricted to non-peak traffic periods when possible.
- The area required for the temporary occupancy of the park during construction would be minimized to the extent possible.

Long-Term Impacts

- Wayfinding signage would be provided for the new shared use path indicating connections to park and recreation facilities.
- Alternative EC-2: Opportunities would be considered to reconfigure the Hood River Marina Park and Basin boat launch parking area to replace some or all of the boat launch parking spaces removed by the Project.

As described above, both build alternatives would result in a Section 4(f) *de minimis* use of Marina Park and Basin land as defined in 23 CFR 774.17. The Section 4(f) use will be a *de minimis* impact as the proposed mitigation would minimize the anticipated impacts. The transportation use of the Hood River Marina Park and Basin, together with the proposed impact avoidance, minimization, and mitigation measures incorporated into the Project, will not adversely affect the activities, features, or attributes that qualify the Hood River Marina Park and Basin for protection under Section 4(f). As required by 23 CFR 774(5)(b), ODOT will consult with the Official with Jurisdiction for Marina Park (the Port) during the 45-day comment period for the Supplemental Draft EIS.

The public will be afforded opportunities to review and comment on the effects of the Project on Marina Park and Basin during the public comment period for the Supplemental Draft EIS.

Waterfront Trail

Description of Section 4(f) Resource

The Port owns and maintains the western 2.6 miles of the 2.8-mile long Waterfront Trail. The trail runs from The Hook on its western end through Waterfront Park, Jensen Beach, Event Site Park, Nichols Basin, The Spit/Sandbar, and Hood River Marina Park and Basin before passing under the existing Hood River Bridge. East of the bridge, the trail extends along the Columbia River waterfront past the Hood River Inn to the privately-owned Hood River Waterplay site. The trail is accessible from many points.

Waterfront Trail in Marina Park and Basin looking east to the existing Hood River Bridge

The affected segment of Waterfront Trail qualifies as a Section 4(f) property because the segment is publicly owned (by the Port), is open to the public, its major purpose is park and recreation activities, and it is significant as a park and recreation facility as demonstrated by its inclusion in the Hood River Valley Parks and Recreation District Master Plan (2012), the 2018 Port of Hood River Waterfront Report, and the Port's list of waterfront recreation sites.

Section 4(f) Finding and Mitigation

Construction activity on the replacement bridge will require closing an approximately 0.1-mile segment of trail through Marina Park for the safety of trail users, thereby temporarily occupying the trail segment. The segment would be closed for less than the duration of construction and represents less than five percent of the trail's length. When this segment of the trail is closed, pedestrians and bicyclists using the western portion of Waterfront Trail would need to use a signed detour to reach the eastern extent of the trail, thereby preserving the trail functionality during construction. The Project would not involve any physical changes to Waterfront Trail during closure of the 0.1-mile segment. Following construction, the 0.1-mile segment would be reopened, would not be physically changed, and would be returned to its preconstruction condition.

Alternatives EC-2 and EC-3 would result in a slightly longer segment of the trail being covered by the replacement bridge as compared with the existing bridge; for Alternative EC-2 the covered portion of the trail would increase from 24 feet to 56 feet and in Alternative EC-3 from 24 feet to 150 feet, but the Project would result in no physical changes to the trail itself. Additional lighting would be incorporated into the Project design to improve lighting and visibility under the bridge.

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate impacts to Waterfront Trail:

Construction Impacts

- Pedestrian and bicycle access to Waterfront Trail would be maintained during construction. A signed, ADA-accessible detour route would be provided when portions of the trail are temporarily closed during construction.
- Advanced notice to park and recreation users about sidewalk, trail, and/or park closures and temporary access changes during construction would be provided.
- BMPs appropriate to the context would be developed for the Project prior to construction. These BMPs would take into account the practices set forth in ODOT and WSDOT regulations and guidance documents and would be implemented during construction to reduce noise, dust, and pollutant emissions generated by construction equipment. Please also see the air quality and noise mitigation commitments listed in Section 3.18, Air Quality and Greenhouse Gases, and Section 3.20, Noise and Vibration.

Long-Term Impacts

- Appropriate lighting along the segment of the Waterfront Trail covered by the replacement bridge would be incorporated as part of the Project to mitigate lighting and visibility concerns caused by the wider bridge.
- Wayfinding signage would be provided for the new shared use path indicating connections to park and recreation facilities.

The Section 4(f) legislation states that if the five conditions in 23 CFR 774.13(d), commonly known as the "temporary occupation exception criteria," are met, then the temporary occupancy is not adverse in terms of the Section 4(f) statute's preservationist purpose and therefore it does not constitute a "use" as defined under Section 4(f).

As required by 23 CFR 774(5)(b), ODOT will consult with the Official with Jurisdiction for Waterfront Trail (the Port) during the NEPA 45-day comment period for the Supplemental Draft EIS.

Summary of Impacts by Alternative

The Section 4(f) finding for each Section 4(f) property is summarized in Exhibit 6-2.

Exhibit 6-2. Summary of Section 4(f) Findings by Alternative

Section 4(f) Property	No Action Alternative	Preferred Alternative EC-2	Alternative EC-3
Hood River Bridge	• None	• Use	• Use
Historic Columbia River Highway	• None	• No Use	• No Use
SP&S Railway	• None	• No Use (Temporary occupancy)	• No Use (Temporary occupancy)
Other Historic Sites	• None	• No Use	• No Use
Bridge Park	• None	• *de minimis* impact	• *de minimis* impact
Hood River Marina Park and Basin	• None	• *de minimis* impact	• *de minimis* impact
Waterfront Trail	• None	• No Use (Temporary occupancy)	• No Use (Temporary occupancy)

6.4. Public Comments

Public comments will be summarized in this section following the Supplemental Draft EIS comment period.

7. LIST OF PREPARERS

Exhibit 7-1 provides a list of individuals involved in the preparation of the Supplemental Draft EIS.

Exhibit 7-1. List of Supplemental Draft EIS Preparers

Name	Agency/Company	Years of Experience	Area of Responsibility
Agency Staff			
Emily Cline	FHWA	20	Environmental Program Manager
Kevin Greenwood	Port of Hood River	21	Project Director
Jeff Buckland, AICP	ODOT	33	Environmental Project Manager
Sarah Eastman	ODOT	5	Region Environmental Coordinator/Environmental Project Manager/Environmental Technical Reviewer
Magnus Bernhardt, PLA	ODOT	25	Visual Technical Reviewer
Thomas Braibish	ODOT	21	Geology and Soils Technical Reviewer
Daniel Burgin	ODOT	7	Noise Technical Reviewer
Robert W. Hadlow, PhD	ODOT	30	Cultural Resource Technical Reviewer Park and Recreation Technical Reviewer Section 4(f)/6(f) Technical Reviewer
Michael Holthoff	ODOT	27	NEPA Documentation Reviewer
Natalie Liljenwall, PE	ODOT	23	Air Quality Technical Reviewer Energy Technical Reviewer Noise Technical Reviewer
Thomas McConnell	ODOT	23	Land Use Technical Reviewer
Teresa Nowicki, PG	ODOT	17	Hazardous Materials Technical Reviewer
Denis Reich	ODOT	23	Environmental Manager
Ken Sargent	ODOT	30	Vegetation and Wetland Technical Reviewer
Devin Simmons	ODOT	25	Fish and Wildlife Technical Reviewer Waterways and Water Quality Technical Reviewer
Kristen Stallman	ODOT	22	Major Projects Manager
Roy Watters	ODOT	17	Cultural Resources Technical Reviewer and Tribal Liaison
Chris Regan	WSDOT	25	Technical Review Lead for WSDOT
Consultant Team			
Angela Findley, PMP	WSP	25	Consultant Team Project Manager
Allison Kinney	WSP	6	Fish and Wildlife Technical Author Wetlands and Vegetation Technical Author
Anne Pressentin	WSP	20	Public Involvement Lead
Brian Carrico, AICP	WSP	25	Permitting Lead
Bridget Wojtala	WSP	6	Wetlands and Vegetation Scientist
Chivanna Pot, PE	WSP	25	Roadway Design
Cole Bales, PE	WSP	11	Geology and Soils Technical Reviewer
Dan Gunderson, PWS	WSP	17	Fish and Wildlife Technical Lead Wetlands and Vegetation Senior Scientist

Name	Agency/Company	Years of Experience	Area of Responsibility
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Dustin Day, PWS	WSP	21	Fish and Wildlife Scientist Wetlands and Vegetation Technical Lead
Earl Christian	WSP	18	Visual Simulations
Emma Johnson, AICP	WSP	9	Executive Summary Cumulative Impacts Technical Author
Ethan Spoo, AICP	WSP	17	EIS Author
Ginette Lalonde	WSP	20	Air Quality Technical Reviewer Energy Technical Reviewer
Jessie Jones	WSP	18	Graphic Design
Jennifer Rabby, AICP	WSP	17	Cumulative Impacts Technical Reviewer EIS Author Land Use Technical Reviewer Park and Recreation Technical Lead Section 4(f)/Section 6(f) Technical Lead
Jerry Ramsden, PhD, PE	WSP	26	Hydraulics Lead
John Horne, PhD, PE	WSP	33	Geotechnical Lead
Kirk Ranzetta, PhD	AECOM	24	Historic Resources
Malie McClellan	WSP	12	Social and Environmental Justice Technical Lead
Marianne Zarkin, PLA	Marianne Zarkin Landscape Architects	23	Architectural Design
Mark Hirota, PE	WSP	37	Design Lead
Mat Dolata, PE, PTP, PTOE	WSP	14	Transportation Lead
Natalie Owen, PE	WSP	13	Roadway Design
Nicole McDermott, AICP	WSP	12	Cumulative Impacts Technical Lead Land Use Technical Lead Public Involvement
Patrick Romero, INCE, ENV SP	WSP	20	Hazardous Materials Technical Reviewer Noise Technical Lead
Peter Geiger	WSP	31	Economic Technical Lead Geology and Soils Technical Lead Hazardous Materials Technical Lead Waterways and Water Quality Technical Lead
Rebecca Frohning	WSP	19	Air Quality Technical Lead Energy Technical Lead Noise Technical Reviewer
Ryan Weston, PLA	WSP	18	Visual Technical Author

Name	Agency/Company	Years of Experience	Area of Responsibility
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Scott Polzin, PMP	WSP	25	Environmental Lead
Shannon Williams, PE	WSP	20	Stormwater Design Technical Reviewer
Shoshana Jones, MA, JD	AECOM	7	Architectural History
Stephanie Sprague, PMP, AICP	WSP	18	Social and Environmental Justice Technical Reviewer Visual Technical Lead
Tim Pfeiffer, PE, GE	Foundation Engineering	34	Geotechnical Investigations Lead
Tim Woods, MS	AECOM	3	Architectural History
Tom Wilson, PE	WSP	27	Bridge Design
Yonas Habtemichael, EIT	WSP	3	Stormwater Design

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8. DISTRIBUTION LIST

The Supplemental Draft EIS is being sent to the agencies, tribes, elected officials, and organizations identified in the Distribution List (Exhibit 8-1). Others interested in viewing the Supplemental Draft EIS can access the document on the Port's website or view copies of the document on an appointment-only basis at the Port's offices. Washington residents can contact the Port to schedule an appointment to view the document in Klickitat County. The document is also available at local libraries listed below.

Exhibit 8-1. Agency and Tribal Distribution List

Federal Agencies

- National Oceanic and Atmospheric Administration Fisheries, Columbia Basin Branch
- National Oceanic and Atmospheric Administration Fisheries, West Coast Region
- National Park Service, Pacific West Region
- U.S. Army Corps of Engineers, Portland District
- U.S. Bureau of Indian Affairs, Northwest Regional Office
- U.S. Coast Guard, 13th District
- U.S. Department of Agriculture, Rural Development, Tangent, Oregon Office
- U.S. Environmental Protection Agency, Region 10, Seattle
- U.S. Fish and Wildlife Service, Portland
- U.S. Forest Service, Pacific Northwest Region (R6)

Tribes

- Confederated Tribes and Bands of the Yakama Nation
- Confederated Tribes of Siletz Indians
- Confederated Tribes of the Grand Ronde Community of Oregon
- Confederated Tribes of the Umatilla Indian Reservation
- Confederated Tribes of the Warm Springs Reservation of Oregon
- Cowlitz Indian Tribe
- Nez Perce Tribe

State Agencies

- Oregon Department of Environmental Quality
- Oregon Department of Fish and Wildlife
- Oregon Division of State Lands
- Oregon Parks and Recreation Department
- Oregon State Historic Preservation Office
- Oregon State Marine Board
- Oregon Water Resources Department
- Washington State Department of Archaeology and Historic Preservation
- Washington State Department of Ecology
- Washington State Department of Fish and Wildlife
- Washington State Department of Natural Resources
- Washington State Department of Transportation, Southwest Region
- Washington State Recreation and Conservation Office

Local Agencies

- City of Bingen
- City of Hood River
- City of Hood River, Landmarks Review Board
- City of White Salmon
- Columbia River Gorge Commission
- Hood River County
- Hood River County Commissioners
- Klickitat County
- Klickitat County Commissioners
- Klickitat County Natural Resources
- Klickitat County Senior Service
- Mid-Columbia Economic Development District
- Port of Klickitat
- Port of Klickitat Commissioners
- Port of Skamania County
- Skamania County
- Skamania County Commissioners
- Southwest Washington Regional Transportation Council

Elected Officials

- Anna Williams, Oregon Representative
- Chris Corry, Washington State Representative
- Chuck Thomsen, Oregon State Senator
- Curtis King, Washington State Senator
- Gina Mosbrucker, Washington State Representative
- Jaime Herrera Beutler, U.S. Representative, Washington
- Jeff Merkley, U.S. Senator, Oregon
- Maria Cantwell, U.S. Senator, Washington
- Patty Murray, U.S. Senator, Washington
- Ron Wyden, U.S. Senator, Oregon
- U.S. Representative, Oregon's 2nd Congressional District

Organizations/Businesses

- AAA of Oregon
- AAA of Washington
- Best Western Plus Hood River Inn
- Bingen School Inn
- BNSF Railway Company
- Bridge RV Park and Campground
- Columbia Gorge Audubon Society
- Columbia Gorge Fruit Growers
- Columbia Gorge Wind and Water Assoc.
- Columbia River Inter-Tribal Fish Commission (CRITFC)
- Columbia River Towboat Association
- Columbia Riverkeeper
- Discover Mortgage
- Friends of the Columbia Gorge
- Gorge Flyboard
- Gorge Heritage Museum/ Klickitat County Historical Society
- Gorge Technology Alliance
- Hattenhauer Distributing Company
- Historic Bridge Foundation
- Historic Columbia River Highway Advisory Committee

- History Museum of Hood River County
- Hood River Chamber of Commerce
- Hood River Rotary Club
- Hood River WaterPlay
- Hood Tech Corporation
- Innovative Composite Engineering
- Insitu, Inc.
- Milestone Nursery
- Mt. Adams Chamber of Commerce
- Mt. Adams Transportation Services
- Oregon Trucking Associations
- Our Savior Lutheran Church
- Pacific Boardsports
- Riverside Farms
- SDS Lumber
- Skamania County Chamber of Commerce
- Skyline Health
- The Next Door, Inc.
- Thrive Hood River
- Tidewater Barge Lines
- Underwood Fruit
- Union Pacific Railroad
- Vanguard Nursery
- Washington Trucking Associations
- Washington Trust for Historic Preservation
- Windermere Real Estate

Local Libraries

- Stevenson Community Library (limited services during the COVID-19 pandemic)
- White Salmon Valley Community Library (limited services during the COVID-19 pandemic)

Education Organizations

- Columbia Gorge Community College
- Columbia Gorge Education Service District
- Education Service District #112
- Hood River County School District
- White Salmon Valley School District

Media

- Columbia Gorge News
- Port of Hood River Port News
- Port of Hood River website
- Social media: Facebook, Twitter

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10. GLOSSARY

Term	Definition
303(d)	Section 303(d) of the federal Clean Water Act requires each state to monitor and regulate the quality of water in its rivers and streams. If a water body does not meet a particular water quality standard, as determined by the state, that water body is "303(d) listed."
Allision	A violent striking (such as in a collision) with a fixed object. This is in contrast with "vessel contact" with a fixed object such as would be made with bridge fenders in the ordinary course of say a tug and barge passing under a bridge.
Anadromous	Refers to fish species that are hatched in fresh water, enter the ocean for a portion of their life cycle, then return to freshwater to spawn. Common anadromous species include but are not limited to salmon, steelhead, eulachon (smelt), and shad.
Apex	The highest point of the bridge deck riding surface.
Asbestos	Asbestos was used extensively in building materials in the early and mid-20th century. It is a known carcinogen, and is extremely friable—that is, it crumbles easily. Demolition of buildings or other structures that contain asbestos can release small particles of asbestos into the air, and these particles in turn can lodge in the lungs of people who breathe this air. Proper caution and abatement procedures can reduce or eliminate this hazard to human health.
Attainment	A geographic area that meets or does better than the National Ambient Air Quality Standards (NAAQS).
Area of potential effects (APE)	The geographic area within which the project may directly or indirectly cause alterations in the character or use of historic properties and cultural and archaeological resources. This is a term that specifically applies to Section 106 of the National Historic Preservation Act (NHPA).
Area of potential impact (API)	The geographic area within which the project may result in direct or indirect impacts. Different resource areas (e.g., land use, fish and wildlife, etc.) may have different API boundaries based on potential impacts.
A-weighted decibel scale (dBA)	A scale used to measure loudness of sound that is adjusted to the frequency response of the human ear.
Benthic zone	The ecological zone at the lowest level of a water body. The benthic zone includes surface sediment on the bed or floor of the water body, as well as some sub-surface layers.
Best management practices (BMPs)	Physical, structural, and/or managerial practices that, when used singly or in combination, prevent or reduce pollutant discharge.
Biological assessment (BA)	A document that is prepared for compliance with the (ESA) in cases where the potential exists for a project to affect federally listed species. Its purpose is to document the project's potential to affect listed species, to document measures taken to avoid adverse effects, and to make a provisionary effects call. Scientific data used to prepare BAs are generally gathered through a combination of field reconnaissance surveys, and scientific literature research; and provisionary effects determinations are established based on an analysis of project design details. The BA is submitted to NOAA Fisheries and/or the USFWS.
Build alternative	A project alternative that includes construction of one or more project elements.
Cofferdam	A temporary, watertight enclosure for excluding water from an area that is normally submerged.
Columbia River Datum (CRD)	The plane of reference from which river stage is measured on the Columbia River from the lower Columbia River up to Bonneville Dam, and on the Willamette River up to Willamette Falls.

Term	Definition
Cooperating Agency	Any federal agency, other than a lead agency for the proposed project, that has jurisdiction by law or special expertise with respect to any environmental impact involved in the proposed project or project alternative. Upon request of the lead agency, any federal agency with jurisdiction by law shall be a cooperating agency.
Congestion	Congestion occurs when the demand is greater than the transportation system's capacity. For highways, congestion occurs when the average speed along a section of highway or on a particular facility falls below a specified speed, generally below 30 miles per hour (mph). Recurrent congestion is caused by constant excess volume compared to capacity. Nonrecurring congestion is caused by actions such as special events and/or traffic incidents.
Construction staging	A staging area is a designated area where vehicles, supplies, and construction equipment are positioned for access and use to a construction site.
Consulting party	A term used to identify an entity that is involved in determinations of eligibility, findings of effect and any Memorandum during the National Historic Preservation Act (NHPA) Section 106 process. These consulting parties include the SHPOs, federally and non-federally recognized tribes, local government, and other individuals or organizations with a demonstrated interest in the project and its effects on historic properties.
Criteria pollutants	This is a group of six common air pollutants for which the EPA has set National Ambient Air Quality Standards (NAAQS): ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO_2), and lead.
Critical habitat	Specific geographic areas that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection. Critical habitat may also include areas that are not currently occupied by the species but will be needed for its recovery.
Cultural resources	A term that collectively refers to historical and archaeological resources. Cultural resources are broadly divided into the historic built environment (buildings, structures and objects), archaeological sites, and defined features or areas that are important to maintaining cultural identity.
Cumulative effect (cumulative impact)	The effect on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects result from individually minor but collectively significant actions taking place over a period of time.
Decibels	A unit for relative sound intensity. For highway traffic noise, an adjustment, or weighting, of the high and low-pitched sounds is made to approximate the way that an average person hears sounds. The adjusted sounds are called "A-weighted levels" (dBA).
Delay	The additional time that a vehicle must slow down or stop in traffic compared to freely-flowing traffic conditions; used to measure congestion levels.
de minimis impact	An impact that involves the use of Section 4(f) property that is generally minor in nature. A *de minimis* impact is one that, after taking into account avoidance, minimization, mitigation and enhancement measures, results in no adverse effect to the activities, features, or attributes qualifying a park, recreation area, or refuge for protection under Section 4(f). For historic properties, a *de minimis* impact is one that results in a Section 106 determination of "no adverse effect" or "no historic properties affected." A *de minimis* impact determination requires agency coordination with the officials having jurisdiction over the Section 4(f) property and opportunities for public involvement. A *de minimis* impact determination may not be made when there is a constructive use.

Term	Definition
Disabled	A person having a long-lasting condition, such as severe vision or hearing impairments, or a condition that substantially limits basic physical activities. It may also include people with conditions that make other activities such as learning, getting around inside the home, working at a job, or going places outside the home difficult.
Displacement	An individual, family, partnership, association, corporation, or organization, which moves from their home, business, or farm, or moves their personal property, as a direct result of acquisition, demolition or rehabilitation for a project. Displaced persons from federally funded projects are eligible for relocation assistance under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (the Uniform Act).
Distinct Population Segment (DPS)	A vertebrate population or group of populations that is discrete from other populations of the species and significant in relation to the entire species.
Easement	A legal right to use property owned by someone else for a designated purpose.
Elderly	A man or woman aged 65 or older.
Embankment	A bank, mound, dike, or the like, raised to carry a roadway or hold back water.
Emergency response time	The amount of time that it takes for emergency responders to arrive at the scene of an incident after the emergency response system was activated.
Endangered species	Any species that is in danger of extinction throughout all or a significant portion of its range.
Environmental justice	The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies. Meaningful involvement means: people have an opportunity to participate in decisions about activities that may affect their environment and/or health; the public's contribution can influence the regulatory agency's decision; community concerns will be considered in the decision-making process; and decision makers will seek out and facilitate the involvement of those potentially affected.
Evolutionary Significant Unit (ESU)	A population of organisms that is considered distinct from similar organisms for purposes of conservation. In the Pacific Northwest, several species of salmonids (salmon, steelhead) are divided into ESUs for purposes of study and species management and recovery.
Erosion	The wearing away of soil and rock. This may be by weathering and the action of streams, glaciers, waves, wind, and underground water.
Floodplain	The 100-year floodplain is an area with a one percent chance of being flooded in any given year.
Full acquisition	A property acquisitions where the entire property would be acquired for the project.
Fugitive dust	A particulate emission made airborne by forces of wind, man's activity, or both. Unpaved roads, construction sites, and tilled land are examples of areas that originate fugitive dust.
Greenhouse gases (GHGs)	Gases that trap heat in the atmosphere. These include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.
Groundwater	Water found below the water table.
Hazardous materials	A substance or mixture of substances having properties capable of producing adverse health or safety effects.
Highways of Statewide Significance	Interstate highways and other principal arterials that are needed to connect major communities in Washington State. The designation helps assist with the allocation and direction of funding.

Term	Definition
Hispanic/Latino	A self-designated classification for people whose origins are from Spain, the Spanish-speaking countries of Central or South America, the Caribbean, or those identifying themselves generally as Spanish, Spanish-American, etc. Origin is viewed as ancestry, nationality, or country of birth of the person or person's parents or ancestors. Hispanic/ Latino persons may be of any race, White and non-White.
Impervious surface area	A hard surface area that either prevents or retards the entry of water into the soil mantle as occurs under natural conditions (prior to development) and from which water runs off at an increased rate of flow or in increased volumes. Common impervious surfaces include but are not limited to rooftops, walkways, patios, driveways, parking lots, storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled or macadam surfaces.
Indirect effects	Effects are caused by the proposed action or alternative and are later in time or farther removed in distance, but still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems.
Jurisdictional waters	Waters under the jurisdiction of the USACE, as granted by the federal Clean Water Act. Although specific determinations must be made, jurisdictional waters typically include waterways and their associated wetlands.
Landscape unit	The geographic unit on which impacts on visual character, viewers, and visual quality are assessed.
Level of service (LOS)	A qualitative measure of the effectiveness of one or more elements of transportation infrastructure. LOS is most commonly used to describe roadway performance, but can also be applied to transit, intersections, or other infrastructure elements. The AASHTO defines the following levels-of-service: A= Free flow; B=Reasonably free flow; C=Stable flow; D=Approaching unstable flow; E=Unstable flow; and F=Forced or breakdown flow.
Limited English proficient	Individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English.
Liquefaction	A phenomenon associated with earthquakes in which sandy to silty, water-saturated soils behave like fluids. As seismic waves pass through saturated soil, the structure of the soil distorts, and spaces between soil particles collapse, causing ground failure. In general, young, loose sediment and areas with high water tables are the most vulnerable to liquefaction.
Low-income	A person whose median household income is at or below the U.S. Department of Health and Human Services poverty guidelines.
Maintenance area	An area that has a history as a non-attainment area for a particular air pollutant—i.e., of failing to meet the NAAQS for that pollutant—but is now meeting the NAAQS and that has a maintenance plan for monitoring levels of that pollutant and ensuring continued conformity to the appropriate NAAQS.
Minority	A person who is: Black (a person having origins in any of the black racial groups of Africa); Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or the Spanish culture or origin, regardless of race); Asian/Pacific Islander (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or American Indian or Alaskan Native (a person having origins in any of the original peoples of North America, and who maintains cultural identification through tribal affiliation or community recognition).
Mitigation	The measures that could be taken to lessen the negative effects predicted for each resource. These measures may include reducing or minimizing a specific negative effect, avoiding it completely, or rectifying or compensating for the negative effect.

Term	Definition
Mobile source air toxics (MSATs)	The Clean Air Act identifies 188 air toxics, of which MSATs are the subset emitted by mobile sources. Although MSATs pose potential public health concerns, there are no established regulatory limits for relevant MSAT pollutants.
National Ambient Air Quality Standards (NAAQS)	The maximum allowable level, averaged over a specific time period, for a certain air pollutant in the outdoor air.
National Environmental Policy Act (NEPA)	The federal policy that requires agencies to incorporate environmental considerations into decision making by preparing an environmental assessment or EIS that consider the effects of proposed actions.
National Register of Historic Places (NRHP)	A list of districts, sites, buildings, structures, and objects maintained by the National Park Service (NPS), each determined by the NPS to be of historic, cultural, architectural, archaeological, or engineering significance at the national, state, or local level.
Natural silence	The sounds of nature uninterrupted by human-caused noise or noise from the modern world; also referred to as natural quiet
No Action Alternative	The alternative under which the proposed project will not be built. The No-Action Alternative is carried through the NEPA process and analyzed for effects as a way to formally compare the effects of the proposed project's build alternatives with what is likely to happen if none of these project alternatives is constructed. The No Action Alternative analysis takes into account other projects that are already planned and that are reasonably certain to be constructed.
Noise abatement criteria (NAC)	If future noise levels with a project are predicted to approach or exceed the FHWA noise criteria at a sensitive receptor, abatement is evaluated at the receptor. For residences, the criterion is 67 dBA. WSDOT considers a noise effect to occur if the noise level is within 1 dBA of the 67 dBA criterion.
Noise barrier	A solid wall or earth berm located between the roadway and receiver location, which breaks the line-of-sight between the receiver and the roadway noise sources.
Non-attainment area	An area that fails to meet air quality standards for one or more pollutants. An area may be a non-attainment area for, say, ozone (O_3), but an attainment area for carbon monoxide (CO). See also maintenance area.
Ordinary high water mark (OHWM)	The highest water level that a water body has reached and maintained long enough to leave visible evidence on the landscape.
Out-of-direction travel distance	Out-of-direction travel distance is the increased distance traveled for trips made from an original to a destination due to changes in the existing roadway.
Partial acquisition	A property acquisition where a portion of the property would be acquired for the project and the remainder would be retained by the current owner.
Participating agency	Under SAFETEA-LU Section 6002, a "participating agency" is any federal or nonfederal agency (federal, state, tribal, regional, or local government agency) that may have an interest in the project. This provides a method for agencies that do not have permitting or approval authority over any portion of the project to have a more formal role in the environmental review and comment process. Nongovernmental organizations and private entities cannot serve as participating agencies.
Particulate matter (PM_{10} or $PM_{2.5}$)	Naturally-occurring and man-made particles with a diameter less than 10 microns (PM_{10}) or 2.5 ($PM_{2.5}$) microns. Sources of particulate matter include sea salt, pollen, road dust, agricultural dust.
Peak period	A part of the day with the highest traffic volume during which traffic congestion on roads is worst.
Phase II environmental site assessment	An on-the ground assessment that includes sampling and laboratory analysis to confirm the presence of hazardous materials.

Term	Definition
Piles	Large-diameter steel pipes hammered or drilled into the soil until they reach dense soil or bedrock. The piles provide support to hold the weight of the bridge and traffic. Piles also provide stability in the event of an earthquake.
Pollutant	Any substance that upon reaching the environment (soil, water, or air), is degrading in effect so as to impair the environment.
Pre-contact	Refers to the time before interactions between Native American peoples and Euro-American settlers, for this EIS, in the Pacific Northwest.
Programmatic agreement	A document that spells out the terms of a formal, legally binding agreement between a state DOT and other state and/or federal agencies. In the context of Section 106 of the NHPA, programmatic agreements are used when the effects of an undertaking are not fully known.
Purpose and Need	A formal statement of the objective(s) of the proposed project (Purpose) and the problem(s) that construction of the project is intended to solve (Need). The Purpose and Need Statement is developed early in the project planning stage and serves as a guideline for future project efforts. For example, in evaluating alternatives, any alternative that does not meet the project's purpose and need will be dropped from consideration.
Retaining wall	A retaining wall is a wall that is built to prevent the earth behind it from moving.
Right-of-way	Land set aside for use as a highway. Rights of way are purchased (acquired) prior to the construction of a new road. Usually enough extra land is purchased for the purpose of providing safety clearances, building retaining walls, and implementing other mitigation features.
Riparian	The word riparian (from the Latin ripa, meaning river bank) refers to the interface between a stream or river and the adjoining land. A riparian zone or riparian area refers to the land immediately adjacent to the river. Riparian habitat provides important ecological functions for water, plants, and animals. A riparian corridor is a connected strip of riparian habitat; riparian corridors may be defined in terms of width for purposes of ecological assessment, regulation, and permitting.
River mile (RM)	The measure, in miles, of the distance from the mouth of a river or stream, following the course of the river or stream. The mouth of the river or stream is RM 0.
Scoping	An open process involving agency and public outreach and a public comment period early in the development of a project. Scoping shares preliminary information about the proposed action and the range of possible alternatives to seek input on potential issues, concerns, and the overall technical scope of analysis that should be considered for the project.
Section 106 of the NHPA of 1966	Section 106 of the NHPA applies to undertakings by any federal agency, undertakings receiving federal assistance, and undertakings requiring the issuance of a license from any federal agency. In the event of any of the above undertakings, the head of the acting, assisting, or licensing federal agency must "take into account" the possible effects the undertaking will have on any district, site, building, structure or object that is included in or is eligible for inclusion in the NRHP prior to the approval of expenditure of federal funds or issuance of a license. In addition, the head of any such agency must afford the Advisory Council on Historic Preservation an opportunity to comment on the undertaking.
Section 4(f) of the U.S. DOT Act of 1966	Section 4(f) states that the Secretary of Transportation may approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, wildlife and waterfowl refuge of national, State, or local significance, land of an historic site of national, State, or local significance only if there is no "prudent and feasible alternative" to the use of that land, and the program or project includes all possible planning to minimize harm to the public land involved.
Sediment	A general term for any unconsolidated particulate material that has been deposited by an agent of transport, such as water, ice, or wind.

Term	Definition
Seismic hazard	Refers to the probability and amount of ground movement expected from an earthquake.
Shared use path	Paved, off-road facilities designed for travel by a variety of nonmotorized users, including bicyclists, pedestrians, skaters, joggers, and others.
Signalized intersection	A junction of two or more public roads that is controlled by a traffic signal.
Soundscape	A sound or combination of sounds that arises from an environment, including the listener's perception of sounds heard as an environment.
Spill prevention, control, and countermeasures plan	A plan that includes site information regarding hazardous materials, sensitive environmental receptors, spill prevention and containment methods, response procedures, and equipment and material to carry out preventive and response measures and reporting requirements. These plans ensure that all harmful and/or deleterious materials are properly stored and contained. Contractors are required to prepared and implement the spill prevention, control, and countermeasures plan in accordance to WSDOT Standard Specification 1-07.15(1).
Stormwater	The portion of precipitation (rainwater or snowmelt) that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a stormwater drainage system into a defined surface water body or a constructed infiltration facility.
Stormwater treatment	Stormwater treatment (or management) reduces or eliminates the negative impacts of stormwater runoff by controlling flooding, reducing erosion, and improving water quality through the implementation of structural, vegetative or managerial practices used to treat, prevent or reduce water pollution.
Temporary erosion and sediment control plan (TESCP)	A plan to prevent and minimize soil erosion. A TESCP includes measures that may include, but are not limited to, the following (as necessary, depending on site conditions): temporary plastic cover, coir fabric (and/or wattles), seeding and mulching, temporary vegetated filter strips (i.e., for construction site stormwater control), slope drains, silt fence, sand, or geotextile-encased triangular silt dikes.
Thalweg	The line of lowest elevation within a river. The thalweg is in the middle of a rivers navigation channel and also serves as boundary line between states.
Tolling	The practice of charging a fee for use of a transportation facility such as a highway. There are several types of tolling: charging a fixed fee; charging a variable fee based on the type of vehicle, time of day, or volume of traffic; tolling a section of highway; and so-called cordon pricing which charges a fee to enter a particular area such as a metropolitan area. Tolling is generally used to help meet the cost of constructing or operating the facility, but also as a transportation demand management tool.
Traditionally underserved populations	Individuals who are low-income, minority, disabled, elderly, youth, transit-dependent and/or those who are limited English proficient.
Traffic congestion	A condition on road networks that occurs as use increases, and is characterized by slower speeds, longer trip times, and increased vehicular queueing.
Travel time	The total time spent traveling from one point to another point.
Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) (Uniform Act)	A federal law that establishes minimum standards for federally-funded programs and projects that require the acquisition of real property (real estate) or displace persons from their homes, businesses, or farms. The Uniform Act's protections and assistance apply to the acquisition, rehabilitation, or demolition of real property for federal or federally-funded projects. The Uniform Act requires that comparable decent, safe, and sanitary replacement housing within a person's financial means be made available before that person may be displaced. When such housing cannot be provided by using replacement housing payments, the Uniform Act provides for "housing of last resort."

Term	Definition
Viewshed	The portion of the landscape that can be seen from within the project area and that has views of the project area. The boundaries of a viewshed are determined by the surrounding topography, vegetation, and built environment.
Visual quality	Character of the landscape, which generally gives visual value to a setting.
Vehicle miles traveled (VMT)	The total number of miles that residential vehicles are driven in a specified period of time for a given area or transportation facility.
Water quality	Refers to the characteristics of the water—for example, its temperature and oxygen levels, how clear it is, and whether it contains pollutants.
Waters of the State/U.S.	These are waters which are protected under the Clean Water Act and by state statute. They generally include all waters that are used or have been used for commerce, as well as associated waters such as adjacent wetlands or impounded waters. Any project activities that would impact such waters require permitting by the appropriate agency(ies).
Wetlands	Areas that are saturated with groundwater near the surface or areas that are flooded for extended periods of time and that support vegetation that can live in saturated soils. Wetlands generally include swamps, marshes, bogs, and similar areas.
Wetland buffer	An area adjacent to a wetland that can reduce adverse impacts to the wetland's ecological functions and values from development or construction activities. Wetland buffers can also provide support functions for species that live in and around wetlands and reduce the impacts of human disturbance on the wetland.
Wildlife corridor	An area of habitat that connects wildlife populations separated by human activities or structures.

11. INDEX

U.S. Department of Transportation
Federal Highway Administration

Oregon Department of Transportation

PORT OF HOOD RIVER